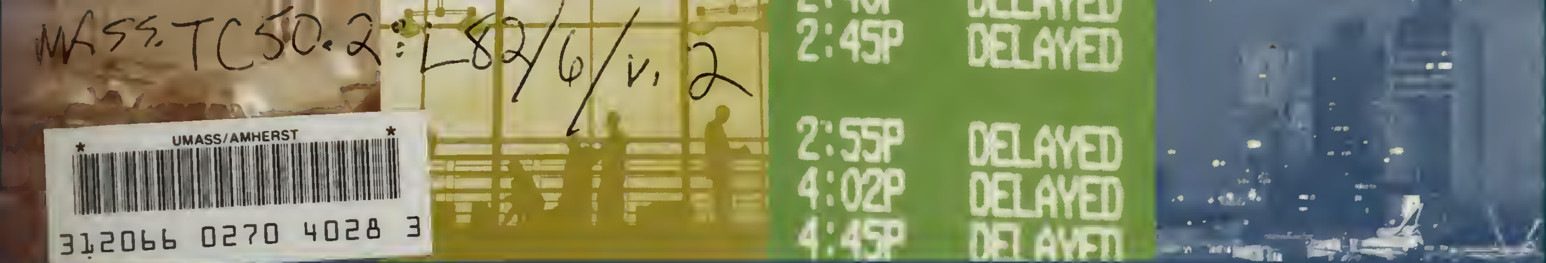


Supplemental Draft Environmental Impact Statement/Final Environmental Impact Report

EOEA #10458

Logan Airside Improvements Planning Project

Boston
Logan
International
Airport

Massachusetts Port Authority

Federal Aviation Administration

Volume 2

Supplemental Draft Environmental Impact Statement/
Final Environmental Impact Report

EOEA #10458

Logan Airside Improvements Planning Project

Boston
Logan
International
Airport

massport Massachusetts Port Authority

Federal Aviation Administration

March 2001

Volume 2

Printed on Recycled Paper

Volumes

Supplemental DEIS/FEIR

Table of Contents

Tables

Figures

5 Affected Environment

Key Points

In the Airside Improvements Planning Project Draft Environmental Impact Statement/Environmental Impact Report (Airside Project Draft EIS/EIR), Chapter 5 presented an overview of the baseline environmental conditions within the airport and surrounding communities. In this chapter of the Supplemental Draft Environmental Impact Statement/Final Environmental Impact Report (Supplemental DEIS/ FEIR), the analysis of baseline conditions was expanded to include analyses of the current environmental conditions that were presented in the *1998 Annual Update.*[1] This chapter also includes a description of historic properties and parklands within the Project impact area (this material was previously contained in Chapter 8 of the Airside Project Draft EIS/EIR) to support the analysis of potential impacts under Section 4(f) of the Department of Transportation Act, and under Section 106 of the National Historic Preservation Act of 1966, as amended.

This Supplemental DEIS/FEIR adds to the analysis included in the Airside Project Draft EIS/EIR by including 1998 Existing Conditions in comparison to 1993 Historic Modeled Conditions. The 1998 Existing Conditions are based on the findings of the *Logan Airport 1998 Annual Update*[2] to the *Logan Airport 1994/1995 Generic Environmental Impact Report* (GEIR)[3].

Noise

- Winthrop and East Boston are most affected by noise exposure from Logan operations, with significant numbers of residents experiencing noise greater than 70 decibel (dB) Day-Night Sound Level (DNL), and some experiencing it at levels above 75 dB DNL. South Boston and Revere are generally next most affected. Exposures at these highest noise levels support the continuing need to improve compliance with PRAS goals that attempt to reduce exposure in the most highly exposed areas without significantly increasing the exposure above 65 dB DNL in other areas.

- Nighttime noise levels determined from Time-Above calculations for both the 1993 modeled historic and the 1998 actual operations indicate that the most affected areas are Loring Road near Court, Somerset and Johnson, and Bay View

1 *Boston Logan International Airport, 1998 Annual Update*, October ,1999.
2 *Ibid.*
3 The Logan Airport Generic Environmental Impact Report is now known as the Environmental Status and Planning Report (ESPR). The 1999 ESPR was filed with the Executive Office of Environmental Affairs, MEPA Office on December 15, 2000.

and Grand View, all in Winthrop, and Bayswater and Nancia Roads and the East Boston Yacht Club in East Boston. These same sites also experience some of the highest DNL values of any locations around Logan.

- When comparing the noise-exposed population within the 65 dB DNL noise contours for the 1993 and 1998 scenarios, overall the 1993 historic modeled scenario includes approximately 34,400 people, while the 1998 actual condition includes 23,300 people. Almost all of this difference occurs northwest of Logan in East Boston and Chelsea. It is attributable to a variety of factors including 1993s use of 10 years of weather data and modeled, rather than actual, air traffic conditions, and a higher percentage of Stage 3 compliant aircraft.

- Noise exposure from aircraft taxi operations is significantly less than that for in-flight operations, especially during conditions of average sound propagation. However, for maximum propagation the ground taxi DNL is close enough to that for in-flight noise that it can add 1 to 2 dB to the closest receptors. The highest ground taxi noise appears to be at the three receptors around the northeast corner of the airport which are exposed to the noise from aircraft taxiing to take off on Runways 22L and 22R and to return to the terminals after landing on 4L and 4R. The areas are: Loring Road near Court, Winthrop, and Bayswater and Shawsheen Roads and the East Boston Yacht Club, both in East Boston.

Air Quality/Odors

- Measured air quality at Logan is within national and state ambient air quality standards. The Boston metropolitan area has experienced past violations that caused this area to be designated nonattainment for ozone.

- As documented in the *1998 Annual Update* ground service equipment (GSE) constitute the largest source of carbon monoxide (CO) emissions, representing over 43 percent of the Logan total. However, Massport and several major air carriers at Logan are undertaking programs to convert GSE to alternative fuels where feasible. Aircraft closely follow at approximately 42 percent. Airport-related motor vehicles are the third largest source, and other sources have a nearly negligible contribution.

- As in the 1993 historic modeled inventory, in 1998 aircraft emitted the largest portion (80 percent) of oxides of nitrogen (NOx). GSE are responsible for about 10 percent, while motor vehicles and other sources each emit almost 5 percent of the total.

- In 1998, volatile organic compounds (VOCs) emitted by aircraft constitute around 58 percent of the total, followed by GSE at roughly 18 percent. The remainder is divided between motor vehicles (11 percent) and other sources (13 percent).

Drainage and Water Quality

- The Preferred Alternative would be constructed in an area served by an existing stormwater collection and treatment system. Existing airfield stormwater runoff was found to be generally uncontaminated.

Soils

- The Airside Project Draft EIS/EIR identified a potential need to remove up to approximately 240,000 cubic yards of soil material stockpiled on Governors Island for construction of proposed Runway 14/32 (Alternatives 1 and 1A). Since circulation of the Airside Project Draft EIS/EIR, portions of the Governors Island soil stockpile were moved to the Town of Middleton's landfill, in response to a request from the court-appointed receiver for the landfill closure. As a result, there no longer will be a need to remove any of the Governors Island soil stockpile for construction of Runway 14/32.

- Other soil materials which may need to be excavated for taxiway and runway construction can be handled with conventional soil management procedures.

Habitat

- The Preferred Alternative is located in upland areas of the airfield which are generally vegetated by common grassland species. No portion of the Project is proposed within wetland resource areas.

Endangered and Threatened Species

- The upland sandpiper, a State-listed endangered species, has been observed on portions of the airfield to be used for the Preferred Alternative.

Coastal Zone Management Consistency

- In accordance with state and federal regulations, construction projects within the Coastal Zone must be consistent with the policies and principles established for these areas by the Massachusetts Office of Coastal Zone Management (MCZM). Discussion of the consistency criteria is included in Chapter 6, Environmental Consequences.

Parklands and Historic Resources

- Cultural resources including historic resources and parklands which are regulated under Section 4(f) of the Department of Transportation Act, the National Historic Preservation Act ("Section 106"), and by state regulations concerning historic properties are not impacted by the Preferred Alternative. As specified in the May 7, 1999 EOEA Certificate, parklands addressed include the Boston Harbor Islands, Arnold Arboretum, Franklin Park, and the Emerald Necklace.

Other

- The Preferred Alternative is located on an existing airfield and does not alter existing land use patterns. Likewise, the Preferred Alternative will not affect light emissions, floodplain, wild and scenic rivers, economic issues, farmland, energy supply, design and architecture or energy supply.

5.1 Introduction

The Federal Aviation Administration (FAA) directive[4] which implements the National Environmental Policy Act (NEPA) identifies categories of impact that are typically analyzed in an Environmental Impact Statement (EIS). The directive also indicates that analyses should be focused on areas in which impacts are likely, rather than areas where no impact or nominal impact is anticipated. Similarly, the Massachusetts Environmental Policy Act (MEPA) scope for the Logan Airside Improvements Planning Project (Airside Project) also focuses the environmental analysis on specific areas of potential impact. Chapter 5 describes environmental resources that may be affected by the Airside Project alternatives under consideration. Chapter 6, Environmental Consequences, presents an assessment of impacts of the Airside Project alternatives for both the construction and operations phases, while potential cumulative impacts are evaluated in Chapter 7.

5.1.1 Supplemental DEIS/FEIR Studies and Analyses

Additional studies and analyses conducted for this chapter of the Supplemental DEIS/FEIR are summarized below:

- This chapter describes noise conditions in the vicinity of Logan. It differs from the Airside Project Draft EIS/EIR in that it reports on the noise from a new operational scenario, the actual activity occurring in 1998 (as reported in the *Logan Airport 1998 Annual Update).*

- The noise analysis contains additional data in response to the Secretary of Environmental Affairs (EOEA) May 7, 1999 Certificate which requested Massport to extend the outer limits of its DNL and population analyses to the 60 dB DNL contour.

- A broader description is provided of cultural resources including historic resources and parklands which are regulated under Section 4(f) of the Department of Transportation Act, the National Historic Preservation Act ("Section 106"), and by state regulations concerning historic properties. As specified in the EOEA Certificate, parklands addressed include the Boston Harbor Islands, Arnold Arboretum, Franklin Park, and the Emerald Necklace.

[4] *FAA Environmental Handbook*, Order 5050.4A, October 8, 1985.

5.1.2 Affected Resources

As outlined in the EOEA Certificate[5] on the Airside Improvements Planning Project (Airside Project) Draft EIS/EIR, this Supplemental DEIS/FEIR is required to address the following categories of operational impacts: noise, air quality, and odor. This Supplemental DEIS/FEIR addresses those categories of operational impacts and also addresses impacts of more limited duration associated with construction of the alternatives, such as construction traffic. On-airport issues to be addressed by this Supplemental DEIS/FEIR consist of wetlands and vegetation, wildlife, water quality, soils management and relocation impacts to the South Cargo area of the airport. During the construction period, airport operations may also be affected. Background information provided in this chapter is used for detailed analysis of potential impacts presented in Chapter 6, Environmental Consequences, and summarized in Chapter 8, Preferred Alternative and Mitigation.

Due to the nature and location of the proposed Airside Project alternatives, there are several categories of resources that will not receive impacts, or would receive insignificant impacts. These are farmland, floodplains, wild and scenic rivers, light emissions and energy supply. There are no parklands, cultural resources, farmlands, or wild and scenic rivers on the airfield site; and no construction would occur in regulated floodplain areas. The lighting for proposed Runway 14/32 will be low to the ground and will be placed in accordance with FAA regulations for spacing and intensity. Therefore light emissions were not considered to have potential to create annoyance. Energy demands of the various alternatives would be within the capacity of available energy supply.

Categories in which impacts may potentially result have been identified for the Airside Project, and are discussed in the following sections.

5.1.3 Study Area

Logan Airport occupies approximately 2,400 acres, 700 acres of which are water, within the boundaries of the East Boston district of the City of Boston, Massachusetts and the Town of Winthrop, Massachusetts. The airport is surrounded by Boston Harbor on the east and south and on much of the north side as well. The East Boston neighborhoods of Jeffries Point, Eagle Hill, Harborview, and Orient Heights are west and northwest of the airport. The Town of Winthrop is east and northeast of the airport, separated by the waters of Boston Harbor. The Downtown Boston Central Business District is located to the west, and South Boston is located to the southwest across the Inner Harbor. (See Figure 5.1-1.)

[5] Secretary of the Executive Office of Environmental Affairs' on the Airside Improvements Planning Project Draft EIS/EIR, May 7, 1999. (See Responses to Comments, Volume 4).

The proposed Airside Project improvements are located on the existing airfield and do not alter existing land use patterns within the adjacent communities. Under FAA NEPA guidelines, the compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of noise impacts related to that airport. Land use ramifications are also evaluated concurrently with respect to other impact categories, such as wetlands, critical habitat of endangered and threatened species, or the disruption or relocation of communities.

In order to address both the broad concerns of surrounding communities and on-site issues, two study areas have been delineated: one which includes communities impacted by airport noise, as directed by FAA guidelines, and a second which consists of the Logan airfield.

5.1.1.1 Community Study Area

The community study area includes those areas within the 60 dB DNL noise exposure contour for airport-generated noise. While both the Department of Housing and Urban Development (HUD) and the FAA define an annual average DNL of 65 dB as the threshold of noise compatibility with residential land uses, this study contains additional data in response to the May 7, 1999 EOEA Certificate which requested Massport to extend the outer limits of its DNL and population analyses to the 60 dB DNL contour. Additionally, since there are adverse impacts foreseen within the 65 dB DNL noise contour area, FAA procedures call for a general characterization of land uses within the 60 dB DNL contour area.

Logan Airport's noise contours are produced using an FAA-approved computer program known as the Integrated Noise Model, or INM. The INM requires detailed operational information including factors such as:

- The physical runway configuration, the numbers and types of aircraft using the airport,
- Whether the flights occur during the day or night, and
- How often they use each runway, and which flight paths they follow.

Each of these affects the noise exposure in surrounding neighborhoods. (See Section 5.2 for a more detailed discussion of the noise analysis.) The geographic area of the 60 dB DNL or greater contours changes depending on the year's activity and the operational scenarios being evaluated, but it generally includes the communities of Boston (including downtown Boston, East Boston, South Boston, Dorchester, Roxbury, and the South End), Winthrop, Chelsea, Revere, and Everett.

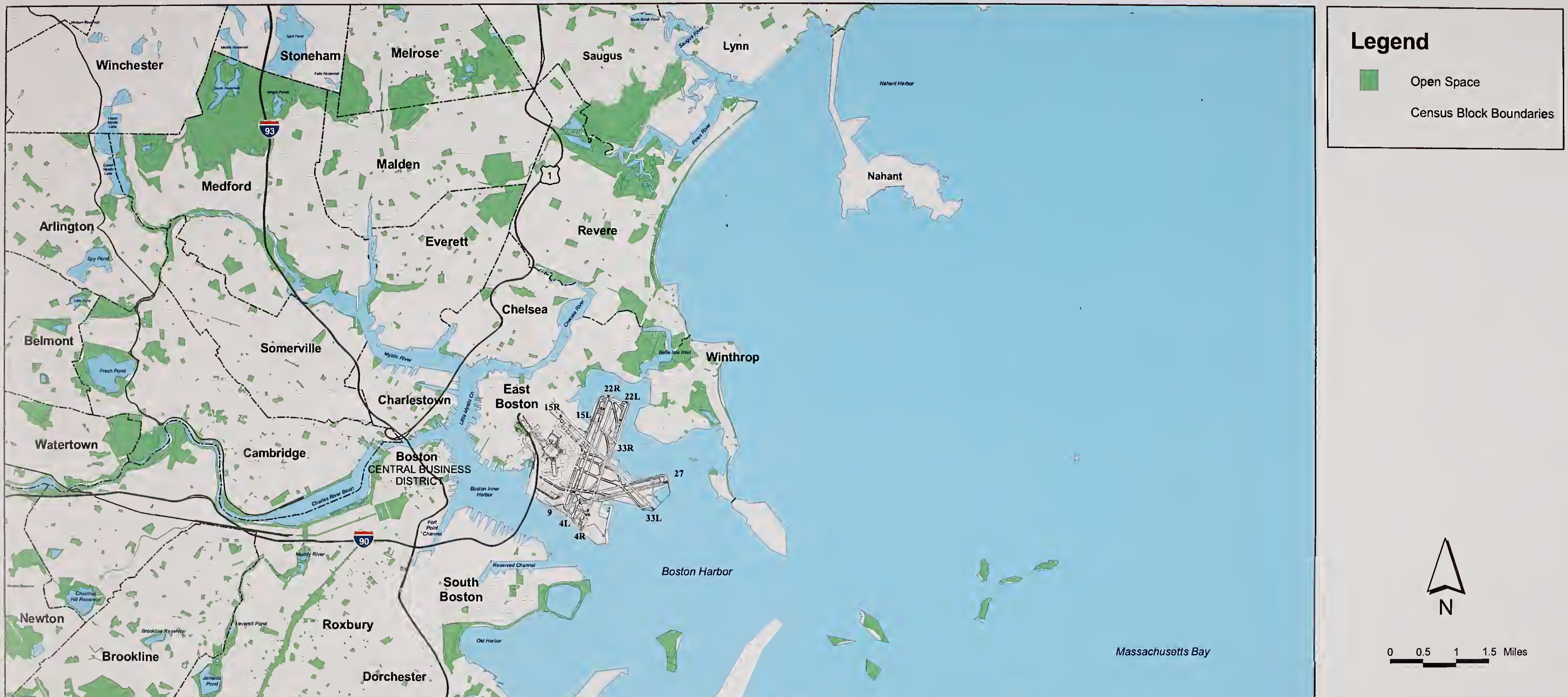


Figure 5.1-1

massport

Boston-Logan International Airport and Surrounding Communities

Source: Harris Miller Miller & Hanson

5.1.1.2 Logan Airfield Study Area

The boundaries of the Airfield study area are shown in Figure 5.1-2. The study area encompasses all airport taxiways and runways as well as the South Cargo Area. Also shown for locational context are nearby airport facilities such as passenger terminals, cargo handling areas, and other facilities. Additional descriptions of the airfield site characteristics are provided in Section 5.5 – Biotic Communities and 5.7 - Soils/Sediment Characterization.

5.1.1.3 Base Year Analysis

This Supplemental DEIS/FEIR includes updated operational and environmental analyses of 1998 conditions consistent with those contained in the *Logan Airport 1998 Annual Update*.[6] While the *Logan Airport 1999 Environmental Status and Planning Report*[7] published in December 2000 includes updated analyses for 1999, the differences between the two study years are small. Between 1998 and 1999, operations declined by 2.5 percent, primarily due to a decline in regional carrier operations.[8] The fleet mix and runway use varied little, the shape of the noise contours and the population impacts, and the air quality and other environmental analyses also yielded similar results.[9] Since the relevant comparison for evaluating the proposed Airside Project improvements is the comparison between the No Action and Preferred Alternatives, and since 1998 and 1999 are similar in terms of passengers, operations, and environmental impacts, this Supplemental DEIS/FEIR uses the 1998 modeling analysis as a representation of recent conditions at Logan.

5.2 Noise

Chapter 5 of the Airside Project Draft EIS/EIR presented a detailed assessment of the noise-affected environment around Logan using 1993 as the study year. Both flight and ground operations were modeled in detail and exposures were described using a variety of noise metrics. Chapter 5 of this Supplemental DEIS/FEIR introduces 1998 to describe the affected environment. This new scenario serves to update the Airside Project Draft EIS/EIR by presenting actual noise exposure data for 1998. The information is taken primarily from the *Logan Airport 1998 Annual Update*, a document published annually by Massport in compliance with requirements of the Massachusetts Environmental Policy Act.

6 *Logan Airport 1998 Annual Update*, October 15, 1999
7 *Logan Airport 1999 Environmental Status and Planning Report*, December 15, 2000.
8 A more detailed comparison of the change between 1998 and 1999 passengers and operations is included in Chapter 2 of the ESPR.
9 The ESPR compares all of the 1998 and 1999 analyses and discusses the differences in detail.

Figure 5.1-2
Airfield Study Area

This Supplemental DEIS/FEIR includes updated operational and environmental analyses of 1998 conditions similar to that contained in the Logan Airport *1998 Annual Update* prepared in October 1999. While the *1999 Environmental Status and Planning Report* published in December 2000 includes updated analyses for 1999, the differences between the two study years are small. Between 1998 and 1999, operations declined by 2.5 percent, primarily due to a decline in regional carrier operations.[10] Since the fleet mix and runway use varied little, the shape of the noise contours and the population impacts were also similar, with slightly less impact in Winthrop and Boston and slightly more impact in Chelsea and Revere in 1999 compared to 1998.[11] The air quality and other environmental analyses also yielded similar results.[12] Since 1998 and 1999 are similar in terms of passengers, operations, and environmental impacts, this Supplemental DEIS/FEIR includes the 1998 modeling analysis as a representation of recent conditions at Logan.

Later in this Supplemental DEIS/FEIR, Chapter 6 presents an assessment of the noise impacts of the Preferred Alternative under two future fleet assumptions and compares those results to the No Action Alternative, as well as to 1998.

5.2.1 Noise Metrics

Both the Airside Project Draft EIS/EIR and this Supplemental DEIS/FEIR depend heavily on the reader's comprehension of common metrics used to evaluate aircraft noise. The two most pertinent to this document are (a) the DNL, and (b) times above designated "threshold" sound levels, commonly referred to as "Time-Above", or TA. Appendix E of this Supplemental DEIS/FEIR provides a summary of noise metrics. The reader is urged to become familiar with the terminology and related background material in order to maximize understanding of the more condensed material presented here.

5.2.2 Modeling Noise of Flight Operations

The following section outlines the FAA's noise modeling tools and their application at Logan.

5.2.2.1 FAA's Integrated Noise Model

The basic tool used to model aircraft flight operations is the Integrated Noise Model, or INM. Developed by the FAA and prescribed on Federally-sponsored projects such as the Airside Project, the INM utilizes airport geometry, descriptions of aircraft operations, and an internal database of noise and performance characteristics to compute the noise of individual flights, adds them together depending on the noise

10 A more detailed comparison of the change between 1998 and 1999 passengers and operations is included in Chapter 2 of the *1999 ESPR*.

11 A more detailed comparison of the change between 1998 and 1999 noise impacts is included in Chapter 6 of the *1999 ESPR*.

12 The *1999 ESPR* compares all of the 1998 and 1999 analyses and discusses the differences in detail.

metrics of interest, and presents the accumulation as a set of contours and/or noise calculations at specific points.

Detailed operational inputs to the INM fall generally into three categories of information including:

- Daily numbers of daytime and nighttime takeoffs and landings by specific aircraft types,
- Typical flight path and runway geometry, and
- Average statistics on usage of each runway and flight path by various aircraft groups.

Historical data from sources such as Massport's noise monitoring system, which records and saves FAA radar data from Logan's Air Traffic Control Tower, are used to develop descriptions of past noise environments. Predicted aspects of an airport's operations are used to evaluate alternative assumptions regarding growth, future aircraft fleets, shifting of flight paths, new runway and taxiway configurations, delay, noise mitigation measures, and other critical planning efforts.

INM users do not normally alter the model's internal noise and performance databases as a part of the modeling process. However, when there is an identifiable need, the FAA requires that any changes to these databases be approved by them prior to use on any FAA-related project. Database adjustments have been made for the Airside Project. In 1996, Massport applied for and received permission to make adjustments to the INM to better account for Logan's unique location surrounded on nearly all sides by water. The water's surface affects propagation of sound into shorefront neighborhoods and is not normally accounted for in the standard INM algorithms. The FAA-approved adjustments are described briefly in the section that follows. (See Appendix E of this document for the FAA's written authorization to modify the INM model.)

5.2.2.2 INM Version 5.0 Upgrade and Adjustment

In 1995, a comparison of INM Version 5.0 modeled noise results with the measured noise levels obtained from Massport's extensive noise monitoring system indicated that the model accurately predicted the noise from aircraft in flight during takeoff but under-predicted the noise from takeoff ground roll and the approach noise just before landing. Therefore, adjustments to the model were developed for arrival noise below 1,000 feet altitude and for the noise radiated from the aircraft during the ground-roll portion of the takeoff.

Authorization for use of the adjustments at Logan was issued in May 1996 by FAA's Office of Environment and Energy. Subsequent noise analyses have been conducted with the adjustments (See Appendix E). In particular, the Airside Project Draft EIS/EIR and this Supplemental DEIS/FEIR, as well as the *Logan Airport 1994/95 Generic Environmental Impact Report* (GEIR) and the *1996, 1997,* and *1998 Annual*

Updates, used INM Version 5.0 with the authorized adjustments for their respective noise analyses.

5.2.3 Model Inputs for INM Noise Analyses

Many of the operational inputs used to model noise exposure for 1993 are summarized in Sections 5.2.6, 6.2.1, and Appendix H of the Airside Project Draft EIS/EIR. This section of the Supplemental DEIS/FEIR updates the Airside Project Draft EIS/EIR by summarizing the operations used to model the 1998 exposure levels and draws brief comparisons between the two periods.

5.2.3.1 Fleet Mix and Operations

For purposes of computing 24-hour DNL's, annual aircraft operations at Logan are subdivided into average daily operations by specific aircraft types, and in some cases by engine model as well. Massport's Noise Office compiles these records of commercial jet and turboprop activity from a variety of sources including published schedules in the Official Airline Guide, comprehensive reports provided by carriers and cargo operators as part of their compliance with Massport's Noise Rules, and reports from the two main flight service companies operating at Logan. The data are consolidated into average daily takeoffs and landings for daytime hours (7:00 AM to 10:00 PM) and nighttime hours (10:00 PM to 7:00 AM) – the periods used in DNL calculations – and are sorted into different trip lengths used by the INM to approximate takeoff weights. Radar data are used to determine actual, rather than scheduled arrival and departure times. General aviation operations, were formerly excluded from modeling because of the difficulty identifying aircraft types and because they made only a minor contribution to total traffic at Logan. The operations have been approximated in the Airside Project analyses and are included in the 1998 analyses which use FAA radar data to determine the numbers and times of operations by these specific aircraft types.

Table 5.2-1 summarizes the average daily operations at Logan for 1998. Commercial jet operations are classified by their noise certification level. Noisier "Stage 2" aircraft (such as the older Boeing 727s and 737s, and McDonnell-Douglas DC-9s) meet initial Federal Aviation Regulation (FAR) Part 36 noise limits issued in 1969, but not the more stringent "Stage 3" limits applicable to newer aircraft (such as the Boeing 737-300 and 737-400, the Boeing 757 and 767, McDonnell-Douglas MD-80s, and Airbus A-300s and A-320s). The Stage 3 operations summary includes Stage 2 aircraft that have been retrofitted with hushkits or new engines to meet the Stage 3 criteria. The number of Stage 3 aircraft has increased steadily based on the ongoing replacement of Stage 2 operations by Stage 3 aircraft in the Logan fleet mix. In 1993, 69 percent of the commercial jet operations at Logan were in Stage 3 aircraft; in 1998, that percentage increased to 87 percent. The 87 percent also compares favorably to the 1998 national average of 82 percent, due in large measure to the benefits of Massport's Noise Rules that have resulted in conversion to Stage 3 aircraft faster than federal regulations.

As of January 1, 2000, operators of large jet aircraft (weighing over 75,000 pounds) are required by *The Airport Noise and Capacity Act of 1990* to have 100 percent of their fleets compliant with Part 36 Stage 3 noise limits. The *Logan Airport 1998 Annual Update* estimated the benefit of an all Stage 3 fleet to be on the order of 3 dB.

Table 5.2-1
1998 Modeled Daily Operations

1998 Operations	Stage 2 Jets	Stage 3 Jets	Turboprops	Totals		
	Day/Night	Day/Night	Day/Night	Day	Night	Daily
Commercial	85/6	541/96	553/22	1,179	124	1,303
General Aviation	5/0	31/4	37/16	73	20	93
Total	90/6	572/100	590/38	1,252	144	1,396

Note: "Day" defined as 7:00 AM to 10:00 PM and "Night" defined as 10:00 PM to 7:00 AM, consistent with the definitions used in DNL calculations.
Source: *Boston-Logan International Airport 1998 Annual Update.*

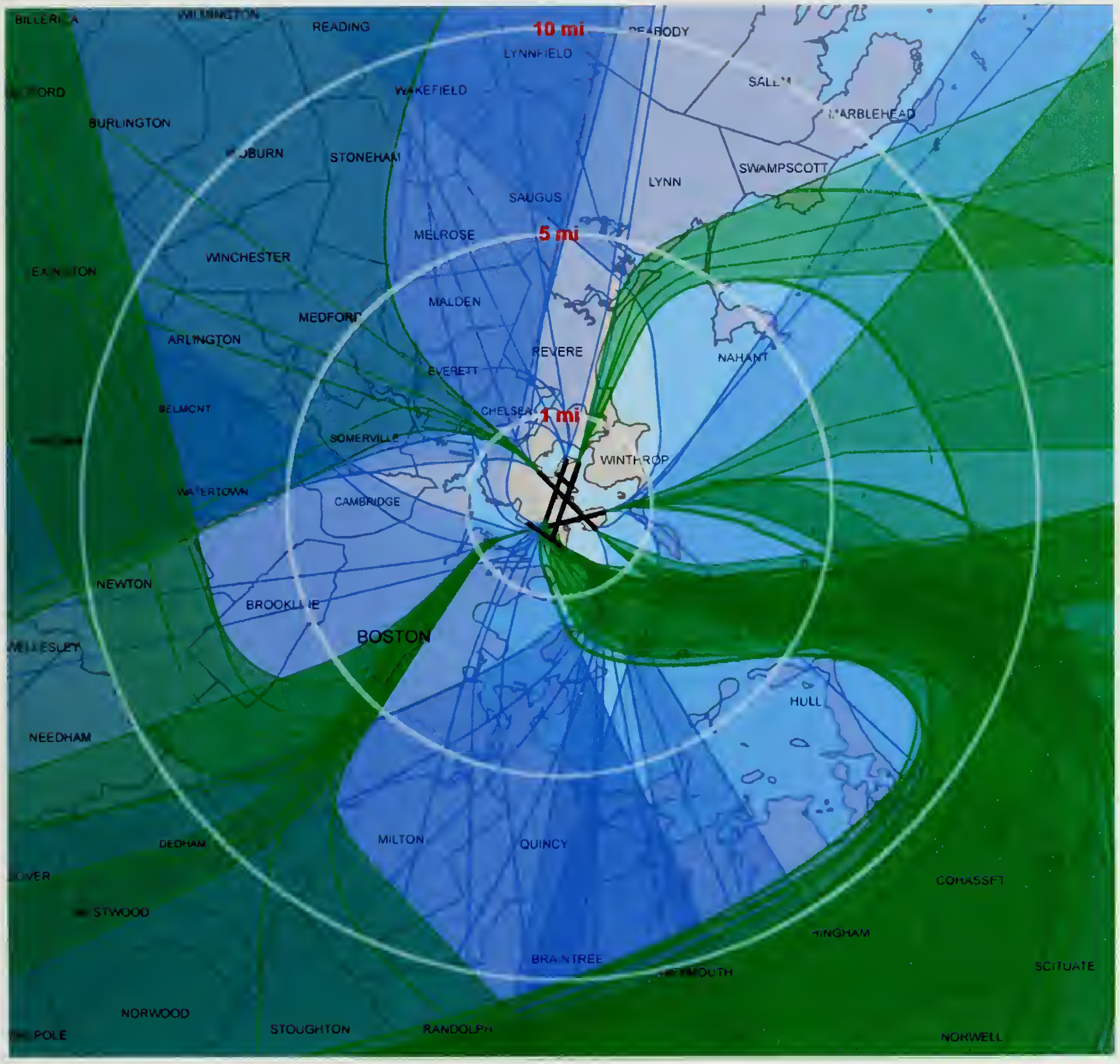
5.2.3.2 Flight Tracks

The flight tracks used in the INM are derived from radar tracks obtained by the Noise Abatement Office at Massport from the FAA's Automatic Radar Terminal System-3 (ARTS) radar at Logan. This radar system obtains the location of each aircraft in the terminal airspace area at intervals of 4 seconds. Massport software is designed to determine the actual tracks and profiles of individual aircraft and to develop tracks for modeling purposes. For example, jet departure operations are typically modeled by a set of five to as many as 15 tracks per runway, while a separate set of three to five tracks per runway is used to model turboprop activity.

The resulting sets of model tracks represent an approximation of the flight corridors that are actually overflown during a year by operations from and to each of the runways. Figure 5.2-1 shows the existing jet and turboprop departure flight tracks. Figure 5.2-2 shows the existing jet and turboprop arrival flight tracks for all runways.

With one exception, the 1998 case uses the same tracks as have been used in each of the scenarios that do not include the new Runway 14/32. The one difference pertains to the departure corridor off Runway 27. For both the Airside Project Draft EIS/EIR and this Supplemental DEIS/FEIR, modeled tracks were developed based on objectives set forth in the FAA's Record of Decision (ROD)[13] on the Environmental Impact Statement for the new Runway 27 departure procedure. The procedure, itself, had not been implemented at the time these Airside Project analyses were initiated so the track locations had to be estimated. Since that time, the tracks and their usage were based on actual radar data for 1998.

[13] Runway 27 Final Environmental Impact Statement, 1997.



Jet Departures in Green   Turboprop Departures in Blue

Aircraft Altitude Along the Flight Path (from runway departure)

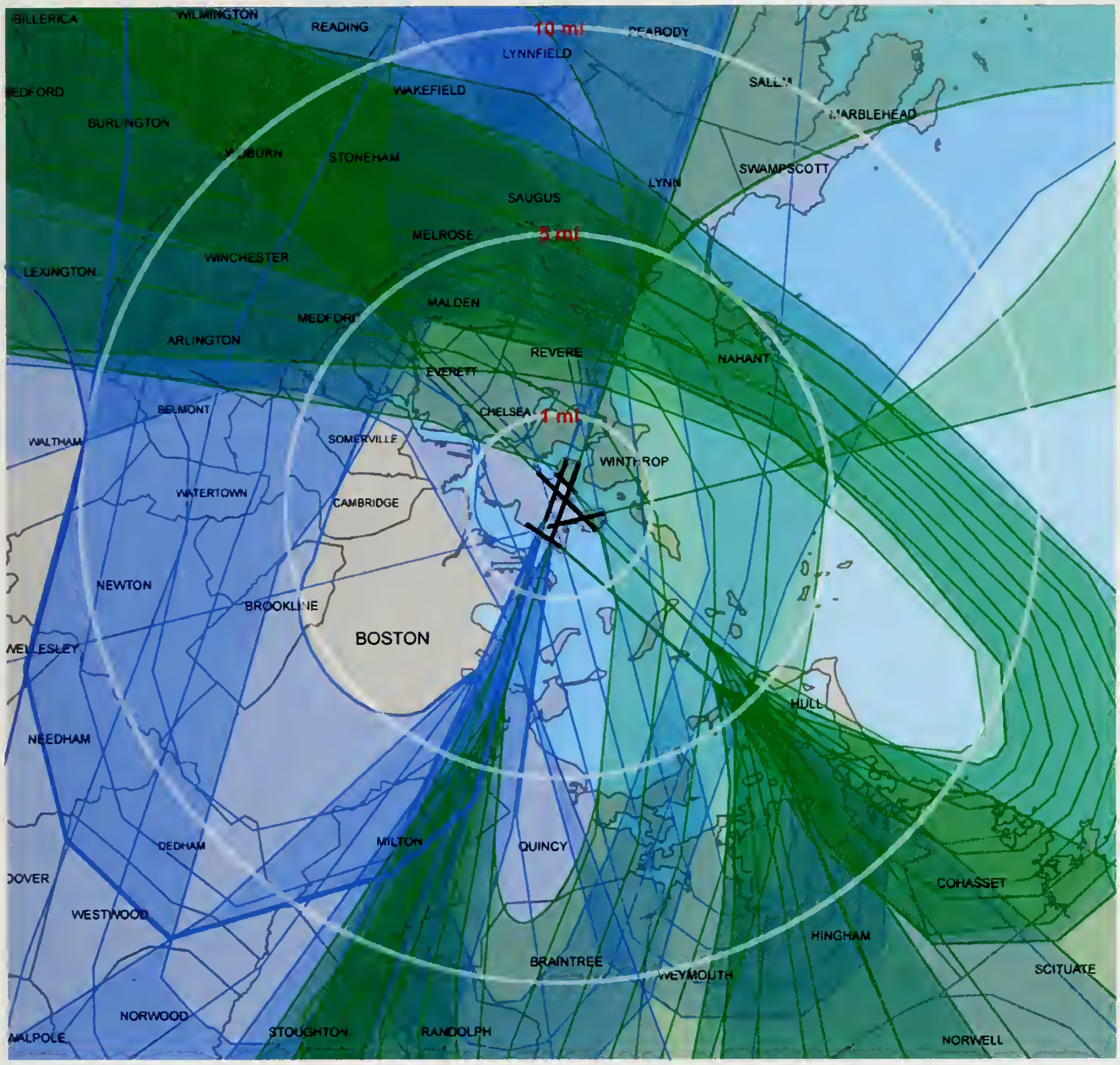
1 Mile from Takeoff= 1,000 ft. or Less   5 Miles from Takeoff = 2,000 ft. or More   10 Miles from Takeoff = 4,000 ft. or More

Notes: Mileage rings are for reference only and do not indicate actual distance along the flight path
Jet departures cross the shoreline of the Southshore at or above 6,000 ft.

massport

Figure 5.2-1

Modeled Departure Flight Tracks for Existing Runway Configurations



Jet Arrivals in Green Turboprop Arrivals in Blue

Aircraft Altitude Along the Flight Path (from runway touchdown)

1 Mile from Touchdown = 500 ft. or Less 5 Miles from Touchdown = 2,000 ft. or Less 10 Miles from Touchdown = 3,000 ft. or Less

Notes. Mileage rings are for reference only and do not indicate actual distance along the flight path
All jet arrivals descend from 11,000 ft. to 6,000 ft. entering final approaching airspace

massport

Figure 5.2-2

Modeled Arrival Flight Tracks for Existing Runway Configurations

The first full year that the new departure procedure for Runway 27 was in effect was 1997. Analyses performed by Massport and reported on in the *1997 Annual Update* indicated that the flight corridor was not being maintained by the percentage of aircraft required by the FAA's ROD. This resulted in an increase in population impacts within the 65 dB DNL contour for 1997. Data collected and analyzed by Massport for the *1998 Annual Update* indicate that the aircraft pilots have been making progress towards attainment of the required flight corridor objectives, but the requirements are still are not being fully met. Thus, differences continue to exist between the 1998 flight tracks and those in the Airside Project EIS/EIR analyses which assumes full achievement of the ROD directives. Full achievement of the ROD tracks was estimated in the *1998 Annual Update* to reduce the number of residents of South Boston exposed to noise above 65 dB DNL by about 2,700 people. The FAA will continue to encourage and monitor compliance with the ROD departure tracks with the intention of further realizing these benefits.

5.2.3.3 Runway Use

Runway use refers to the frequency with which aircraft utilize each runway during the course of a year, as dictated or permitted by wind, weather, aircraft weight, air traffic control conditions, and noise considerations. The more often a runway is used throughout the year, the more noise is created in communities located off the ends of that runway.

Runway use statistics for 1998 are based on traffic counts from radar data processed by Massport's noise and operations monitoring system. Takeoffs and landings are counted separately and sorted into daytime and nighttime operations, then further separated by groups of aircraft having different performance characteristics (for example turboprops separately from 747's) reflecting existing runway use restrictions and takeoff length requirements for certain aircraft. A summary of the computed usages by all jet aircraft was previously published in the *Logan Airport 1998 Annual Update* ; it is reproduced here as Table 5.2-2. Also included are 1998's effective runway utilizations statistics (where usage at night is weighted by a factor of ten). These, too, were reported in the *1998 Annual Update* and are computed each year to compare with Preferential Runway Advisory System[14] (PRAS) goals. The goals, themselves, are discussed in detail in Chapter 4 and their implications on noise exposure are discussed in Chapter 6.

14 The PRAS program is based on an FAA initiative, with the objective of reducing noise exposure for the most highly impacted communities. At Logan, PRAS is a computer program that recommends to the FAA air traffic controllers, runway configuration options that will meet weather and demand requirements, while providing an equitable distribution of the airport's noise impacts on the surrounding communities. The primary objectives of PRAS are to distribute the noise in accordance with annual runway utilization goals, and to provide short-term relief from continuous operations over the same neighborhoods at the ends of the runways. PRAS goals for Logan were established by a PRAS Advisory Committee (including representatives from Massport, the FAA and neighboring communities). PRAS was first implemented in 1983, and the program has undergone two major enhancements since then.

5.2.4 1998 Noise Exposure Levels

Section 5.2.7 of the Airside Project Draft EIS/EIR presented noise exposure levels from flight activity as well as from ground taxi activity using the operations data developed for the 1993 modeled scenario. This current section of the Supplemental DEIS/FEIR updates the analysis of noise from flight operations by presenting the 1998 case.

Table 5.2-2
1998 Actual and Effective Runway Utilizations for Jet Aircraft

	1998 Actual Usage		1998 Effective Usage	
Runway	Arrivals	Departures	Arrivals	Departures
4L	2%	0%	36.7%*	0.0%
4R	41%	8%		6.6%
9	0%	35%	0.0%	29.9%
15R	2%	6%	1.2%	10.9%
22L	7%	5%	11.9%	
22R	0%	28%	0.0%	30.9%*
27	28%	14%	21.7%	16.6%
33L	19%	5%	28.6%	5.2%
Total	100%	100%	100.1%	100.1%

Note: Small addition errors may exist within the table due to rounding.
* For closely-spaced parallel runways, Massport computes effective usage for the combined pair except when use restrictions permit activity to only one of the parallels.
Source: *1998 Annual Update*

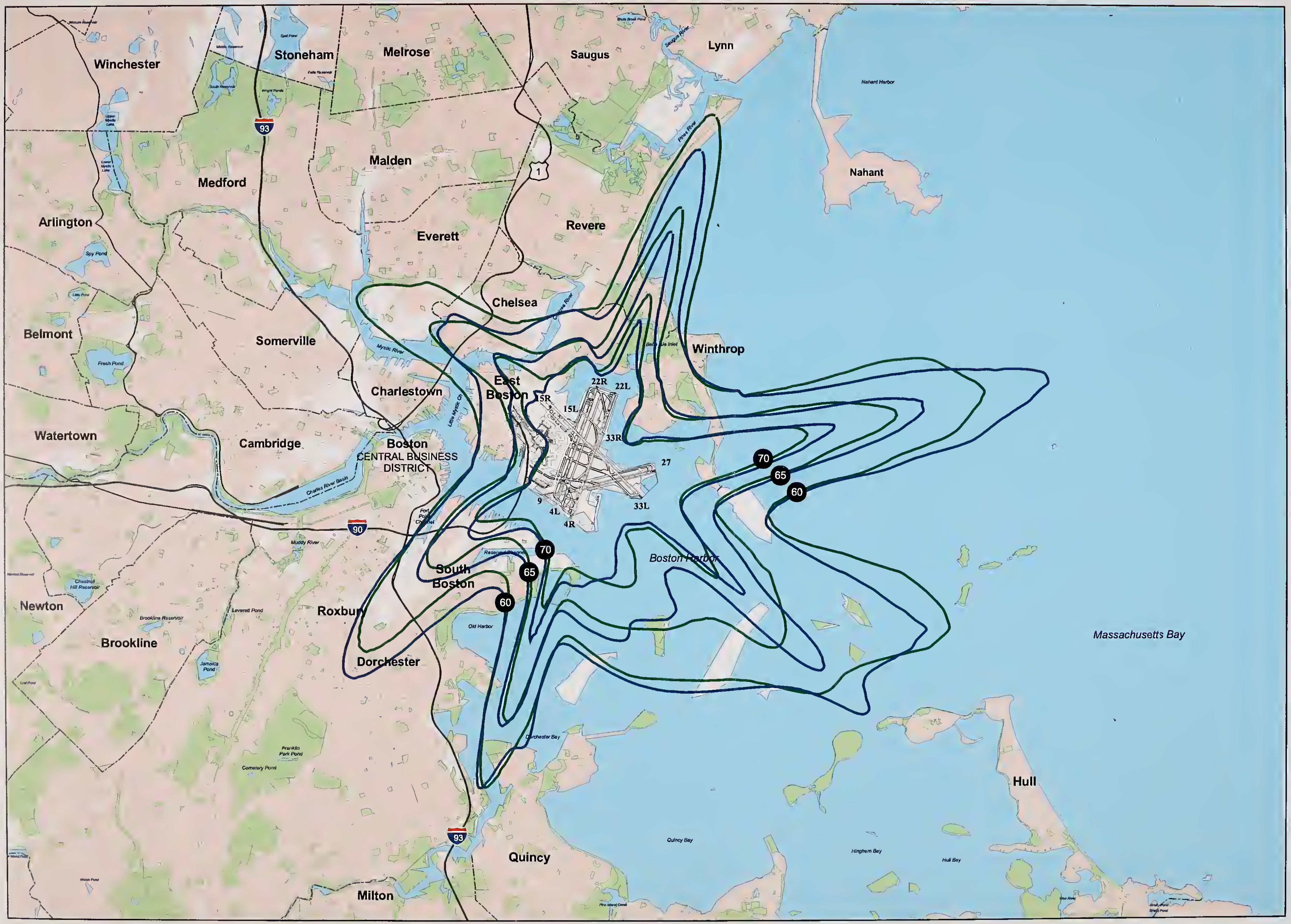
5.2.4.1 Noise from Flight Operations

24-Hour Day-Night Sound Levels (DNL)

For 1998 actual operations, 60, 65 and 70 dB DNL contours generated by the INM are presented in Figure 5.2-3. DNL noise exposure contours are a graphical representation of how the cumulative noise from Logan's aircraft operations is distributed over the surrounding area on an average day of a given year. Comparing DNL contours from different years or different forecast scenarios provides valuable information for noise abatement programs or proposed airport development projects.

Both the Department of Housing and Urban Development (HUD) and the FAA define 65 dB DNL as the threshold of noise incompatibility with residential land uses. Thus, the 65 dB DNL contour is important for population impact assessments. In addition, this study contains data in response to the May 7, 1999 EOEA Certificate which requested Massport to include the 60 dB DNL contour.

The INM produces population estimates simultaneously with the development of DNL contours. Estimates of the numbers of people residing within each noise exposure contour are summarized in Table 5.2-3.



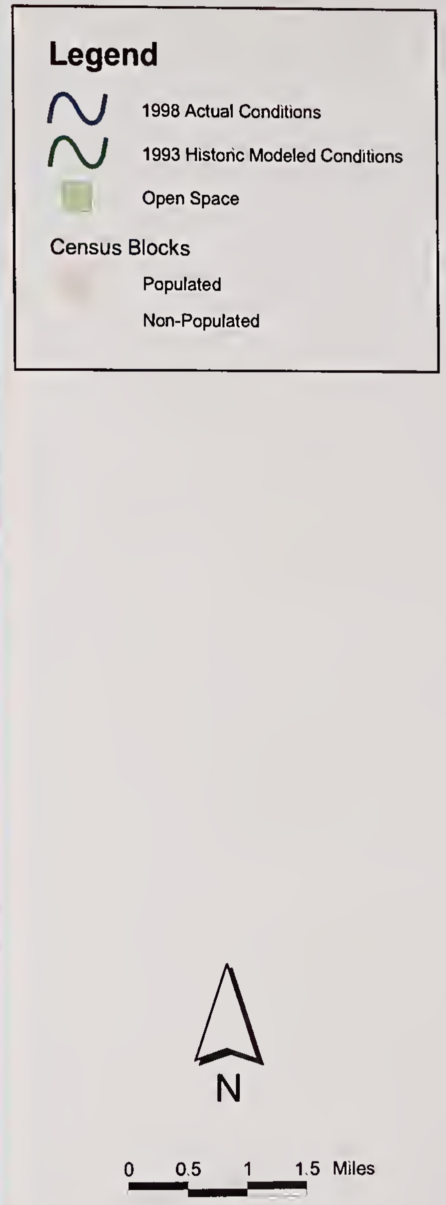


Figure 5.2-3

massport

Day/Night Sound Level Contours
1993 Historic Modeled and
1998 Actual Conditions DNL Contours

Source: Harris Miller Miller & Hanson

Table 5.2-3
Noise-Exposed Populations Within Various Values of DNL for 1998 Actual Operations

Community	DNL 60 dB and Above	DNL 65 dB and Above	DNL 70 dB and Above	DNL 75 dB and Above
Boston[1]	10,809	0	0	0
Chelsea	9,222	0	0	0
East Boston (other than Jeffries Point)	28,108	7,962	590	58
East Boston (Jeffries Pt.)	2,288	0	0	0
Everett	0	0	0	0
Quincy	0	0	0	0
Revere	5,300	3,168	0	0
South Boston	22,511	3,553	48	0
Winthrop	15,120	8,613	2,041	519
Totals	**93,358**	**23,296**	**2,679**	**577**

1 Portions of Dorchester, Roxbury, and the South End are included in the Boston totals.
Source: *1998 Annual Update.*

The 1998 population counts shown above and presented first in the *Logan Airport 1998 Annual Update* are based on the same 1990 federal census as used for the Airside Project. Thus, both the contours in Figure 5.2-3 and the population counts within the contours indicate significant differences in the degree of impact occurring within individual communities. Winthrop and East Boston are most affected, with significant numbers of residents experiencing noise greater than 70 dB DNL, and some experiencing it at levels above 75 dB DNL. South Boston and Revere are generally next most affected. Exposures at the highest noise levels support the continuing need to improve compliance with PRAS goals.

Noise Levels at Specific Monitoring Locations

Massport maintains a state-of-the-art noise monitoring system that continuously records noise levels at each of its permanent noise monitor locations. At present, there are 29 installed and operational noise monitors in residential neighborhoods recording noise from flight operations at Logan.

For the Airside Project noise analyses, 21 of these sites, plus 2 additional locations (A and E) were selected for detailed location-specific analysis (see Figure 5.2-4). These selected monitoring locations included all of the highest noise level measurement sites close to the airport, as well as those further from the airport that are consistently overflown. Five sites were not included since they did not meet one of these criteria. Their measurements were expected to contain enough noise of local origin such that their correlation with modeled aircraft noise would be low. The remaining three sites had not yet been installed at the time the Airside Study was initiated. Locations A and E were added for analysis of noise from ground operations and were discussed in detail in the Airside Project Draft EIS/EIR.
At each of these 23 specific locations, a number of noise computations were completed and reported in the Airside Project Draft EIS/EIR. These included:

- Day-Night Sound Level (DNL)
- Maximum Sound Level (Lmax)
- Night (10:00 PM to 7:00 AM) Equivalent Sound Level (LeqN)
- Times Above Sound Levels of 55, 65, 75, 85, and 95 dB at night (TAN)
- Times Above Sound Levels of 55, 65, 75, 85, and 95 dB for 24-hour days (TA24)

In this Chapter of the Supplemental DEIS/FEIR, similar data for 1998 are reported where available. Table 5.2-4 summarizes the DNL calculations from the INM at the 21 noise monitoring locations used in the Airside analysis. It also includes the times above 65, 75, and 85 dB thresholds for nighttime hours (TAN) and for average 24-hour periods (TA24) at the same 21 locations. These data were reported initially in Table 5-9 of the *1998 Annual Update*. The threshold levels of 65, 75, and 85 dB were identified in the 1998 *Annual Update* as covering different degrees of speech interference depending on factors such as whether people are outdoors, or indoors with windows open or closed.

Observations regarding TA calculations for 1998 are similar to those for DNL. The highest exposure levels occur at Sites 4 and 7 at Bayview and Grandview in Winthrop and along Loring Road in Winthrop, where DNL values are 79 and 76 dB, respectively. These same locations experience sound levels exceeding 85 dB for about 21 to 23 minutes per day and experience daily levels above 75 dB for almost an hour at Site 4 to nearly an hour and a half at Site 7. Sites 9 and 12 at Bayswater near Annavoy in East Boston and at the East Boston Yacht Club also experience high exposures. Their DNL levels are 72 and 74 dB, respectively, and they are exposed to sound levels above 85 dB for 8 and 16 minutes per day. In fact, the five most highly exposed sites, both at night and over 24 hours, are located in Winthrop and East Boston – the same communities identified earlier as having high numbers of people residing in areas where the DNL exceeds 70 dB. Again, these analyses indicate a need for improved conformance with PRAS goals if these highest exposures are to be reduced. Chapter 6 addresses the changes that occur in these communities under the Preferred Alternative as air traffic controllers are better able to achieve the goals.

1 Andrews Street, South End
2 B and Bolton, South Boston
3 South Boston Yacht Club, South Boston
4 Bayview and Grandview, Winthrop
5 Harborview and Faun, Winthrop
6 Somerset and Johnson, Winthrop
7 Loring Road near Court, Winthrop
8 Morton and Amelia, Winthrop
9 Bayswater and Annavoy, East Boston
10 Bayswater/Shawnsheen, East Boston
11 Orient Heights, East Boston
12 East Boston Yacht Club,
13 East Boston High School
14 Jeffries Point Yacht Club, East Boston
15 Admiral's Hill, Chelsea
16 Bradstreet and Sales, Revere
17 Carey Circle, Revere
23 Myrtlebank/Hilltop, Dorchester
24 Cunningham Park, Milton
25 Squaw Rock Park, Quincy
26 Hull High School, Hull
A Sumner near Lamson, East Boston
E Farragut at 2nd, South Boston

NOTE:
Monitors 18 to 22, and 27 and 29 not used for Airside analysis and not shown on map.

LEGEND

● Permanent Noise Monitors
▲ Additional Airside Project Noise Monitors

Location not shown on map:
24 Cunningham Park, Milton

Figure 5.2-4
Noise Monitor Locations Used For Airside Analysis

7466-FIG-5.2-4.p65

Table 5.2-4
INM-Computed DNL Values and Times Above Threshold Values at Specific Points – 1998 Actual Operations

		Day-Night Sound Levels	Minutes Above Threshold in 24-Hour Period (TA 24)			Minutes Above Threshold During Nighttime (TAN)		
Site	Location[1]	DNL	85 dBA	75 dBA	65 dBA	85 dBA	75 dBA	65 dBA
1	Andrews Street, South End	59.6	0.1	3.6	14.6	0.0	0.5	2.7
2	B and Bolton, South Boston	67.4	2.3	8.2	28.2	0.3	1.4	4.6
3	Day Blvd. near Farragut, South Boston	64.3	0.3	11.7	106.0	0.0	1.0	9.1
4	Bayview and Grandview, Winthrop	79.8	20.5	53.0	137.3	1.8	5.4	15.1
5	Harborview and Faun, Winthrop	71.8	8.2	35.4	113.8	0.6	3.4	12.0
6	Somerset and Johnson, Winthrop	68.9	0.7	41.9	174.3	0.0	4.9	25.2
7	Loring Road near Court, Winthrop	76.5	21.8	87.2	270.1	1.9	9.7	34.4
8	Morton and Amelia, Winthrop	67.9	1.6	21.4	112.4	0.1	2.3	15.0
9	Bayswater and Annavoy, East Boston	72.7	7.9	33.8	118.0	1.0	4.7	15.5
10	Bayswater/Shawsheen, East Boston	66.8	2.2	15.1	81.4	0.2	1.8	10.5
11	Orient Heights, East Boston	62.8	0.2	8.8	55.5	0.0	1.0	6.8
12	East Boston Yacht Club	74.7	15.4	80.9	259.2	1.9	12.2	41.1
13	East Boston High School	64.9	0.8	4.2	43.4	0.1	0.7	5.4
A	Sumner near Lamson, East Boston	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Jeffries Point Yacht Club, East Boston	65.7	0.0	19.5	116.5	0.0	2.4	15.5
15	Admiral's Hill, Chelsea	61.7	0.5	3.2	19.9	0.1	0.4	2.4
16	Bradstreet and Sales, Revere	68.6	2.9	13.1	42.1	0.5	1.7	5.6
17	Carey Circle, Revere	57.9	0.0	2.9	18.4	0.0	0.4	2.2
23	Myrtlebank/Hilltop, Dorchester	51.7	0.0	0.0	7.4	0.0	0.0	0.5
24	Cunningham Park, Milton	51.5	0.0	0.1	10.5	0.0	0.0	0.8
25	Squaw Rock Park, Quincy	51.3	0.0	0.0	2.3	0.0	0.0	0.3
26	Hull High School, Hull	57.7	0.0	0.9	24.1	0.0	0.2	3.5
E	Farragut @ 2nd, South Boston	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1 Sites modeled for the Airside Project noise analysis. Refer to Table 5.2-5 for a full list of Massport noise monitor locations.

N/A Not available.

5.2.4.2 Ground Taxi Noise Levels

The Airside Project Draft EIS/EIR provided a detailed analysis of noise from aircraft on taxiways using modeled 1993 operations. Calculations were made for the same five metrics as were assessed for 1993 flight operations:

- Day-Night Sound Level (DNL)
- Maximum Sound Level (Lmax)
- Night (10:00 PM to 7:00 AM) Equivalent Sound Level (LeqN)
- Times above sound levels of 55, 65, 75, 85, and 95 dB at night (TAN)
- Times above sound levels of 55, 65, 75, 85, and 95 dB over 24 hours (TA24)

Chapter 6 of this Supplemental DEIS/FEIR summarizes the analysis of ground noise that was conducted for the Airside Project Draft EIS/EIR, comparing the No Action and Preferred Alternative. Readers interested in further analyses of ground noise are referred back to the Airside Project Draft EIS/EIR.

5.2.5 Comparing Measured and Modeled Noise Levels

Massport's permanent noise monitoring system continuously measures the noise levels at each of 29 microphone locations around the airport. Twenty-one of those sites were operational and used in the analysis of the Airside Improvements Planning Project, as shown earlier in Figure 5.2-1. During normal operation, noise monitors at the microphone locations measure hourly noise exposure levels as well as a variety of metrics associated with individual noise events that exceed preset threshold sound levels. These data are transmitted back to Massport's Noise Abatement Office where daily DNL values as well as other noise metrics are computed from the measured data and summarized.

In past years, *Logan Airport GEIRs* and *Annual Updates* have compared the annual average day values of DNL as measured by Logan Airport's monitoring system to INM-computed annual average values of DNL. Though many of the results are consistent, several have indicated significant differences of 10 or more decibels. One of the major factors contributing to these differences has been that the measured levels include community-based noise sources in the vicinity of the monitor, while the INM-computed levels include the noise only from aircraft. This, in addition to aircraft, has tended to make measured levels higher than predicted values at certain locations.

As a result, commencing at the end of 1997, Massport enhanced its monitoring system to separate aircraft noise events from other sources and produce "aircraft-only" DNL values in addition to the total DNL values it has previously reported. Table 5.2-5 presents these measurement results for 1999 and compares them to INM-generated levels for 1999.

Among the more significant observations regarding these data are the following:

- The average difference in 1998 between the *aircraft-only* DNLs and the INM-generated values at all 29 monitoring locations is approximately 0.9 dB (measured values averaging higher than computed). In 1998, this difference in aircraft-only DNLs was 1.5 dB (measured values also averaging higher than computed).

- At monitoring sites in higher noise environments where measurements are greater than 60 dB (and where it would be expected that the measured levels are more easily identified as aircraft), the average difference between *aircraft-only* DNLs and INM-generated levels in 1998 is 0.2 dB (measured values averaging higher than computed). In 1998, this difference was 0.4 dB.

For a second year, these measured results show high correlation with INM calculations and indicate major improvement in the monitoring system's capabilities. The close agreement that these new aircraft-only levels have with INM-generated values of exposure significantly enhances the monitoring system's value as an analytical tool and also fully corroborates the INM's noise prediction capability.

Table 5.2-5
Comparison of Measured DNL Values to INM-computed DNL Values for 1998

Site	Location	1998 Total Measured DNL	1998 Aircraft – Only DNL	1998 INM Result[1,2]	1998 Measured vs. Modeled
1	Andrews Street, South End	66.3	61.8	58.7	3.1
2	B and Bolton, South Boston	69.2	66.1	66.7	-.6
3	Day Blvd. near Farragut, South Boston	67.4	65.1	64.5	.6
4	Bayview and Grandview, Winthrop	80.2	79.8	79.4	.4
5	Harborview and Faun Bar, Winthrop	71.4	70.6	71.4	-.08
6	Somerset near Johnson, Winthrop	71.0	69.9	68.2	1.7
7	Loring Road near Court, Winthrop	73.9	73.3	76.1	-2.8
8	Morton and Amelia, Winthrop	68.3	67.0	67.5	-0.5
9	Bayswater near Annavoy, East Boston	75.9	75.3	72.4	2.9
10	Bayswater near Shawsheen, East Boston	71.2	69.4	66.3	3.1
11	Selma and Orient , East Boston	66.5	64.8	62.2	2.6
12	East Boston Yacht Club	72.3	71.1	74.0	-2.9
13	East Boston High School	66.9	65.6	64.2	1.3
14	Jeffries Point Yacht Club, East Boston	66.9	64.6	64.9	-0.3
15	Admiral's Hill, Chelsea	67.0	63.3	61.1	2.2
16	Bradstreet and Sales, Revere	71.2	70.8	69.0	1.8
17	Carey Circle, Revere	66.6	62.3	58.3	4.0
18	U.S.C.G. Recreational Facility, Nahant	65.5	55.2	49.8	5.4
19	Smith Lane, Swampscott	56.8	49.2	45.7	3.5
20	Pond and Towns Court, Lynn	58.5	53.6	49.5	4.1
21	Tremont near Prescott, Everett	61.2	54.8	53.8	1.0
22	Magoun near Thatcher, Medford	60.4	52.6	49.4	3.2
23	Myrtlebank near Hilltop, Dorchester	63.1	57.7	52.0	5.5
24	Cunningham Park near Fullers, Milton	60.9	55.5	51.9	3.6
25	Squaw Rock Park, Quincy	57.7	51.0	51.2	-0.2
26	Hull High School near Channel St., Hull	63.2	59.2	58.1	1.1
27	Boston Latin Academy, Roxbury	65.3	60.4	58.8	1.6
29	Lewenburg School, Mattapan	59.0	55.1	54.0	1.1
30	Piers Park, East Boston	63.2	59.9	62.2	-2.3

1 INM Version 5.0 with adjusted database as described in the *Logan Airport 1994/1995 Generic Environmental Impact Report.*
2 Includes FAA-approved terrain adjustment.
Note: Site 28 yet to be installed.

5.3 Cultural Resources

This section summarizes relevant regulations and provides a description of historic properties within the project study area. An historic property, as defined by Section 106 of the National Historic Preservation Act, is any prehistoric or historic district, site, building, structure, or object, included in, or eligible for inclusion in, the National Register of Historic Places (36 CFR 800.16). Section 4(f) of the Department of Transportation Act references "historic sites." Both historic properties and historic sites refer to National Register eligible or listed properties.

5.3.1 Regulatory Context

Cultural resources, which include parklands and historic resources, are regulated under Section 4(f) of the Department of Transportation Act, the National Historic Preservation Act ("Section 106"), and by state regulations concerning historic properties.

5.3.1.1 Section 4(f) of the Department of Transportation Act

Section 4(f) of the Department of Transportation Act of 1966 (recodified as 303(c) of 49 USC) ,as amended, directs that the Secretary of Transportation shall not approve any program which requires the use of a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site, unless there is no feasible and prudent alternative and the harm resulting from the use is minimized.

The potential use of a Section 4(f) property may be either direct or indirect. Direct use is typically considered to include physical involvement of a site, including property acquisition, or facilities modification or relocation. Indirect impacts include changes in access, visual impacts, increased noise levels, and other similar conditions. According to FAA Order 5050.4A:

> *"when there is no physical taking, but there is the possibility of use or of adverse indirect impacts to Section 4(f) land, the FAA must determine if the activity associated with the proposal conflicts with, or is compatible with the normal activity associated with this land. The proposed activity is compatible if it would not affect the normal activity or aesthetic value of a public park, recreation area, refuge, or historic site. When Section 4(f) applies and agencies which have jurisdiction agree that the effects of the action will be satisfactorily mitigated, the action may be considered not to have significant Section 4(f) impacts, and no further analysis is needed."*

5.3.1.2 Section 106 of the National Historic Preservation Act of 1966

The National Historic Preservation Act of 1966, as amended (NHPA), established the Advisory Council on Historic Preservation (ACHP) to advise the President and

Congress on historic preservation matters, to recommend measures to coordinate federal historic preservation activities, and to comment on federal actions affecting properties included in or eligible for inclusion in the National Register of Historic Places. Under Section 106 of the NHPA, federal agencies are responsible for identifying National Register listed or eligible properties and sites and for assessing the effects of agencies' actions on them. The procedures prescribed in Section 106 are referred to as the "Section 106 process" and are set forth in regulations issued by the ACHP, "Protection of Historic Properties" (36 CFR 800). The ACHP regulations emphasize consultation among the responsible federal agency (in this case the FAA, and/or its designee, Massport), the Massachusetts State Historic Preservation Office (MASHPO)/Massachusetts Historical Commission (MHC), and other interested parties. The Section 106 process is being undertaken for the Logan Airside project and the FAA/Massport have consulted with the MASHPO/MHC.

5.3.1.3 Protection of Properties Included in the State Register of Historic Places

The proposed project is also subject to review by the MHC under the Massachusetts General Laws, Chapter 9, Sections 26-27C as amended by Chapter 254 of the Acts of 1988 and the implementing regulations, 950 CMR 71. This state law covers actions of Massachusetts agencies and involves a state process in addition to the federal process under Section 106 of the ACHP, which governs the actions of federal agencies. Standards for the state and federal review processes are similar, with the exception that properties subject to review under Chapter 254 are those listed in the State Register of Historic Places. Section 106 and Chapter 254 reviews are carried out simultaneously by the MASHPO/MHC.

5.3.2 Cultural Resources Context

The Preferred Alternative has the potential to increase noise-exposed populations. A review of MHC files, including the National Register of Historic Places and the Inventory of Historic and Archaeological Assets of the Commonwealth, and field survey were undertaken to identify historic resources within the project area and in surrounding communities.

5.3.2.1 Section 106 Resources

A review of MHC files, including the National Register of Historic Places and the Inventory of Historic and Archaeological Assets of the Commonwealth, and field survey were also undertaken to identify historic resources regulated under Section 106 within the project area and in surrounding communities. Refer to Figure 5.3-1 showing the 1998 65 dB DNL contour on a map of parklands.

5.3.2.2 Other Section 4(f) Resources

In response to the May 7, 1999 EOEA Scope , specific parklands have been identified for analysis, namely the Boston Harbor Islands, Arnold Arboretum, Franklin Park, and the Emerald Necklace. These resources are described below (see Figure 5.3-1).

Boston Harbor Islands

In November 1996, the Boston Harbor Islands became a national park area under the supervision of the National Park Service. The Boston Harbor Islands National Recreation Area recognizes that the islands and the shoreline beaches and access points are one natural and cultural resource system. As a National Recreation Area, the park preserves and protects the open spaces and natural and cultural features of the harbor islands.

According to the legislation that established the Boston Harbor Islands Recreational Area:

> *"the present and future maintenance, operation, improvement, and use of Boston-Logan International Airport and associated flight patterns from time to time in effect shall not be deemed to constitute the use of publicly owned land or a public park, recreation area, or other resource within meaning of section 303(c) of title 49, United States Code, and shall not be deemed to have a significant effect on natural, scenic, and recreation assets with the meaning of section 47101(h)(2) of title 49, United States Code."*[15]

Therefore, Boston Harbor's National Recreation Area is considered to be a compatible land use.

Part of Massachusetts Bay, Boston Harbor, touches six of Boston's neighborhoods (East Boston, Charlestown, Downtown, Fort Point, South Boston, and Dorchester) and seven other municipalities (Hull, Hingham, Weymouth, Quincy, Chelsea, Revere, and Winthrop). Linking the inner and outer harbor are more than thirty islands that range in size from less than one acre to 214 acres that together total 1,200 acres.

15 Sec. 1029. Boston Harbor Island Recreation Area. Excerpted from P.L. 104-333, 110 Stat. 4093 the "Omnibus Public Lands Management Act of 1996."

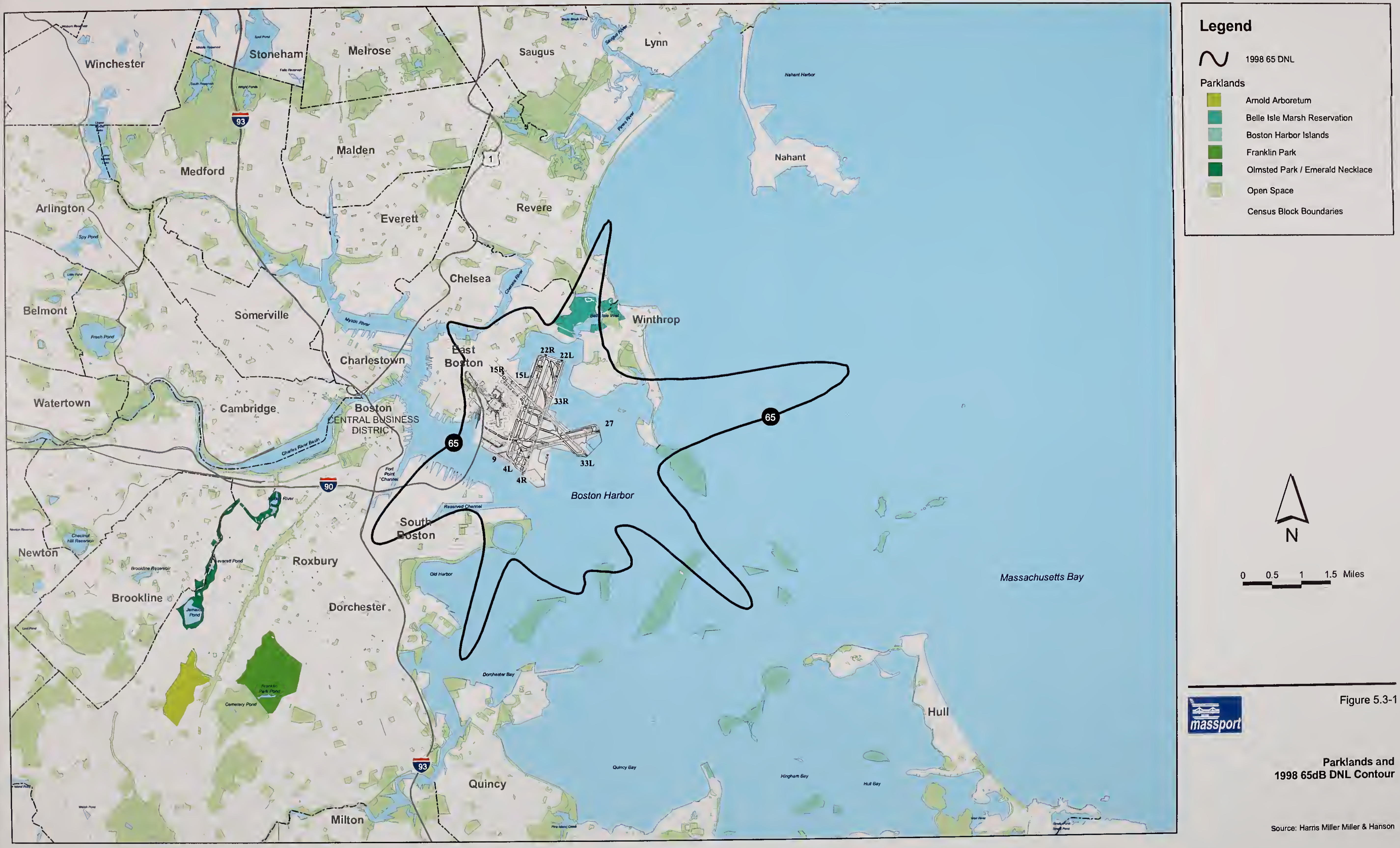


Figure 5.3-1

Parklands and 1998 65dB DNL Contour

Source: Harris Miller Miller & Hanson

Arnold Arboretum

Arnold Arboretum located in the Jamaica Plain section of Boston is recognized as the pre-eminent institution in the United States for the study of ligneous (woody) plants. Established in 1872 through a bequest from the estate of James Arnold, the Arboretum has since more than doubled in size and has assembled a collection of over 6,000 varieties of trees and shrubs from all over the Northern Temperate Zone. The Arboretum is listed on the National Register of Historic Places and is a National Historic Landmark.

Olmsted Park System including the Emerald Necklace and Franklin Park

The comprehensive park system, which Frederick Law Olmsted Sr. planned for the City of Boston in the late 1870s, is one of the nation's outstanding examples of a multi-use open space. Olmsted's original plan for the park system had three purposes: to create a much needed municipal open space while solving an engineering problem; to link annexed parts of the city with its historic center; and to provide a variety of forms of recreation. The Emerald Necklace includes a series of parks linked by continuous parkways. It curves from the mouth of the Muddy River to Franklin Park. The terminus of the system is at Franklin Park, one of Olmsted's masterpieces. In 1885, Olmsted designed this large rural park especially for working class people. The park, included in the earliest schemes for Boston's park system was financed in part by a bequest made to the City by Benjamin Franklin. The Emerald Necklace parks, including Franklin Park, are contributing elements to a National Register of Historic Places historic district and are a Boston City Landmark.

5.4 Air Quality/Odors

This section contains a general discussion of current air quality conditions in the vicinity of Logan and an overview of regulatory criteria. Specifically, this material includes:

- A summary of historic and current air monitoring data;
- An explanation of agency roles and requirements;
- The characterization of airport-related air emissions;
- An emissions inventory/dispersion modeling results for historic (i.e., 1993) conditions; and
- An emissions inventory for actual existing conditions in 1998.

5.4.1 Current Air Quality Conditions and Regulatory Criteria

5.4.1.1 Criteria Air Pollutants and Air Quality Standards

The US Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for the following six "criteria" pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), ozone (O_3), and lead (Pb). The Massachusetts Department of Environmental Protection (DEP) has adopted these same standards.

The concentrations of these criteria air pollutants serve as indicators-of-quality of the outdoor (i.e., ambient) atmosphere. Notably, some criteria pollutants, like O_3, occur regionally (e.g., over many square kilometers); others, like CO, only disperse locally (i.e., over several square kilometers); and some, like PM, have characteristics that can be both regional and local. Those that are emitted directly into the atmosphere are called "primary" pollutants (e.g., CO and PM) in contrast to "secondary" pollutants (e.g., O_3), which are produced in the atmosphere from precursors (e.g., volatile organic compounds [VOCs] and NO_2). A general discussion of the EPA/DEP six criteria air pollutants is shown below in Table 5.4-1 and a detailed discussion of each can be found in Section 5.3-1 of the Airside Project Draft EIS/EIR.

Table 5.4-1
Sources of Criteria Pollutants

Pollutant	Major Sources of Pollutant
Carbon Monoxide (CO)	Natural and manmade; motor vehicles; incomplete combustion of fuels; fossil fuel combustion in utility and industrial boilers.
Nitrogen Dioxide (NO_2)	Natural and manmade; lightning, forest fires, combustion of fossil fuels in motor vehicles and utility/industrial boilers.
Particulate Matter (PM_{10}, $PM_{2.5}$)	Natural and manmade; emissions from fuel combustion; open burning, material handling, dust producing industries, fugitive dust; wind erosion, forest fires; sea spray.
Sulfur Dioxide (SO_2)	Natural and manmade combustion of sulfur bearing fuels (coal, oil, gasoline, diesel) and industrial processes.
Ozone(O_3)	Natural and manmade sources of NO_2 and VOCs, which are released during fuel combustion in engines, electric power generation units and space heaters, lead to formation under certain atmospheric conditions.
Lead (Pb)	Burning of lead-containing fuels and manufacturing.

The Massachusetts and NAAQS standards for these six criteria air pollutants are summarized in Table 5.4-2. Concentration units are micrograms of pollutant per cubic meter of air ($\mu g/m^3$). Notably, the one-hour value for NO_2 is a MA DEP policy guideline (not a regulatory standard in Massachusetts) which is only applicable to major stationary sources emitting over 250 tons/year of NO_2. Although it is not applicable to Logan in a regulatory sense, Massport has used this guideline value in the past in interpreting NO_2 measurements taken at and near runway ends. In general, for standards based on 24-hour (or less) averaging times, the second-highest concentrations are used to determine compliance with these standards. The U.S. EPA has recently introduced some changes to the O_3 and PM standards, which are reflected in Table 5.4-2.

5.4.1.2 Air Monitoring Information

The MA DEP, Division of Air Quality Control, Air Quality Surveillance Branch maintains a network of ambient air monitoring stations throughout the Commonwealth, including three in the general vicinity of Logan. Measurements of criteria air pollutants, their precursors, and meteorological conditions are recorded at these stations on a routine basis.

Table 5.4-2
Massachusetts and National Ambient Air Quality Standards

Pollutant	Averaging Time	Standard ($\mu g/m^3$)
CO	1-hour	40,000
	8-hours	10,000
NO_2	1-hour [1]	320
	Annual	100
PM_{10} ($PM_{2.5}$) [2,3]	24-hours	150 (65)
	Annual [4]	50 (15)
SO_2	3-hours	1,300 (secondary) [5]
	24-hours	365
	Annual	80
O_3	1-hour	235
	8-hours [3]	157
Lead	Calendar quarter arithmetic mean	1.5

1 DEP policy guideline for NO_2 applicable only to major stationary sources.
2 PM_{10} and $PM_{2.5}$ encompass particulate matter with diameters less than or equal to 10 and 2.5 microns, respectively.
3 The status of these standards is unsettled because of recent judicial action, but they are still in place.
4 The PM_{10} standard is based upon an estimated exceedance calculation described in Appendix K of the Airside Project Draft EIS/EIR of 40 CFR Part 50. The annual standard is met if the estimated annual arithmetic mean concentration does not exceed 50 $\mu g/m^3$.
5 Secondary standards are set to protect public welfare.

Source: Massachusetts Air Quality Standards, Title 310, Section 6.00 and 40 CFR 50.4-50.12.

The closest of these DEP air monitoring stations to Logan is located in East Boston, at 340 Bremen Street. Located adjacent to the northwest boundary of the airport, approximately 0.5 miles from Runway 15R, ambient concentrations of CO, SO_2, PM_{10}, and NOx (NO and NO_2) are recorded at this site (see Figure 5.4-1 for location). Another MA DEP station is located at the eastern portal of the Sumner/Callahan Tunnels (approximately 0.5 miles from Logan). This station will pick up CO levels from vehicles, including airport-related, passing into and out of the tunnels. The next closest DEP monitoring station is located on Powder Horn Hill in Chelsea. This is the closest O_3 monitor to Logan Airport. NO_2 and SO_2 are also monitored at this site.

A synopsis of the most recent monitoring data for these stations is provided in Table 5.4-3. As shown, there have been no violations of the NAAQS at the monitoring stations for any criteria air pollutant in at least the past five years.

The following summaries generally describe these data.

- **Carbon Monoxide.** CO is an air pollutant characterized by ambient concentrations that correlate closely with local motor vehicle traffic and meteorological conditions. As a result, the Bremen Street station shows some variability in both the one- and eight-hour CO concentrations over the past five years. This is likely attributable to the influences of traffic, wind, and temperature in the immediate vicinity of the monitor. CO concentrations at the Sumner/Callahan Tunnels site are also heavily influenced by motor vehicle traffic passing into and out of the tunnel. Airport-related vehicles constitute approximately one-half the total tunnel traffic. Notwithstanding the above, CO levels at these two locations have remained well within the one- and eight-hour NAAQS over the past several years.

- **Nitrogen Dioxide.** The monitoring data from the Bremen Street site show neither an upward nor downward trend in NO_2 over the past several years. This is reflected in both the one-hour and annual mean concentrations.

- **Particulate Matter.** With only one exception, the highest 24-hour PM_{10} concentrations at the Bremen Street site have not exhibited a wide variability over the past few years. The annual mean PM_{10} levels similarly have not changed substantially over time. Although the $PM_{2.5}$ monitoring program has begun, the measurements are not yet available through the EPA. The $PM_{2.5}$ and eight-hour O_3 standards have been the subject of litigation, which is described in Section 5.4.1.3.

- **Sulfur Dioxide.** Since 1993, SO_2 levels exhibit slight downward trends at the Bremen Street and Chelsea Station sites.

Figure 5.4-1

Air Quality Modeling Receptor Locations

- **Ozone.** O_3 is not measured at the Bremen Street station. The closest MA DEP ozone monitor to Logan is located at the Soldiers Home on Powder Horn Hill in Chelsea, Massachusetts, approximately 1.5 miles to the northwest. However, as previously discussed, O_3 is a regional air pollutant. Therefore, the monitoring data collected at the Chelsea site is considered representative of O_3 concentrations throughout the Chelsea/ East Boston area. As shown in Table 5.4-3, between 1993 and 1997 the second highest one-hour O_3 concentrations have followed a downward trend. This trend turned slightly upward in 1998. Notably, no violations at the NAAQS for O_3 have been recorded at this site since 1992. Not enough data for the eight-hour averaging time are available to establish a trend. Data from 1997 to 1999 will be used to evaluate the area's compliance with the eight-hour standard, should this standard be implemented and become enforceable by the EPA.

Massport NO_2 Monitoring Program

Since 1982, Massport has collected ambient NO_2 data using diffusion tubes at up to 27 locations (on- and off-airport) in the vicinity of Logan. An analysis of the most recent results and historic trends can be found in the *1999 Environmental Status and Planning Report (ESPR).* The highest NO_2 concentrations recorded in the communities occur in locations that are likely not affected by emissions from Logan. For example, the station with the highest NO_2 concentration in 1997[16] was at Maverick Square and the elevated levels are likely due to the heavy motor vehicle traffic in the Sumner/Callahan Tunnels, Maverick Square and local traffic nearby. No violations of the NAAQS have been recorded at any of the off-airport sites and residential communities.

Soot Measurements

In response to complaints raised by residents living near Logan regarding soot and oily deposits, Massport commissioned two separate, but complementary, scientific studies to help establish the exact nature of this atmospheric fallout, the results of these studies are presented in Section 5.3.1.3 of the Airside Project Draft EIS/EIR.[17],[18]

Odor Assessment

Massport has also conducted an assessment of odor complaints received from communities surrounding the airport, the results of which can be found in Section 5.3.1.2 of the Airside Project Draft EIS/EIR.

16 Year for which information is most recently available.

17 *Community Impact of Aircraft Particle Emissions,* prepared by TRC Environmental Corporation, presented to Massport, Logan International Airport, January 1997.

18 *Soot Deposition Study: Logan Airport and Surrounding Communities,* prepared for Massport, prepared by KM Chng Environmental, Inc., January 1997.

Table 5.4-3
DEP Air Monitoring Data Summary

Pollutant	Averaging Time	1993	1994	1995	1996	1997	1998	Standard(1)
Bremen Street Station(2)								
NO_2 (ppm)	2nd Highest 1 Hour(3)	0.09	0.09	0.09	0.12	0.08	0.028	0.17
	Annual Mean	0.032	0.030	0.027	0.028	0.027	0.08	0.053
CO (ppm)	2nd Highest 1-Hour	3	5	4	3	4	3	9
	2nd Highest 8-Hour	7	7	6	6	5	5	35
PM_{10} ($\mu g/m^3$)	2nd Highest 24-Hour(4)	45	48	52	41	48	49	150
	Annual Mean(4)	21	23	21	21	21	23	50
SO_2 (ppm)	2nd Highest 3-Hour	0.06	0.07	0.05	0.07	0.05	0.05	0.50
	2nd Highest 24-Hour	0.03	0.04	0.02	0.03	0.03	0.02	0.14
	Annual Mean	0.01	0.01	0.01	0.01	0.01	0.01	0.03
Chelsea Station(5)								
NO_2 (ppm)	2nd Highest 1-Hour	0.08	0.09	0.08	0.09	0.08	0.023	0.017
	Annual Mean	0.025	0.026	0.023	0.025	0.022	0.09	0.053
O_3 (ppm)	2nd Highest 1-Hour(6)	0.11	0.11	0.11	0.09	0.09	0.10	0.12
	Highest 8-Hour(7)			0.08	0.08	0.09	0.087	0.08
SO_2 (ppm)	2nd Highest 3-hour	0.07	0.07	0.21	0.19	0.09	0.05	0.50
	2nd Highest 24-Hour	0.04	0.04	0.03	0.04	0.05	0.03	0.14
	Annual Mean	0.01	0.01	0.01	0.01	0.01	0.01	0.03
Sumner/Callahan Tunnels(8)								
CO (ppm)	2nd Highest 1-Hour	7	8	5	7	5	3	35
	2nd Highest 8-Hour	4	5	3	3	4	4	9

Notes:
1 National Ambient Air Quality Standards, except for the case of the 1-hour NO_2 level, which is a MA DEP policy guideline applicable only to major stationary sources.
2 Located at 340 Bremen Street, East Boston.
3 As stated previously, the second-highest concentrations are used to determine NAAQS compliance for this averaging time.
4 Based on PM_{10} data; $PM_{2.5}$ data are unavailable.
5 Located at Soldiers Home, Powder Horn Hill, Chelsea.
6 Based on 1-hour O_3 measurements.
7 Data from years before 1995 are unavailable for this averaging time. The standard states that the average of the annual 4th highest daily 8-hour maximum over a three-year period is not to exceed 0.08 ppm. Therefore, a single exceedance does not constitute a violation of the standards. This standard is not currently enforceable, although it remains in place.
8 Located at portal to Sumner Tunnel at Visconti Street.

5.4.1.3 Attainment/Non-attainment Designations

In accordance with the Federal Clean Air Act (CAA), all areas within the State of Massachusetts are designated as either attainment, non-attainment, unclassifiable, or maintenance with respect to the NAAQS. Simply stated, areas that meet the NAAQS are designated as attainment. Conversely, areas that have violated the NAAQS are designated as non-attainment. Classifications (or degrees) of non-attainment areas are also given as extreme, severe, serious, and moderate. Areas where data are insufficient for classification as either attainment or non-attainment are designated as unclassifiable. Finally, areas that have been re-designated from nonattainment to attainment since 1990 are labeled maintenance.

As shown in Table 5.4-4, the airshed around Logan is designated by MA DEP as an attainment area for CO, NO_2, SO_2, PM_{10}, and Pb meaning that the NAAQS for these five criteria air pollutants are being met. As explained below, the study area is classified as a nonattainment area for O_3.

In June 1999, the Boston-Lawrence-Worcester area was identified as an area that attains the one-hour ozone standard and, as such, an area where the one-hour standard no longer applies. A May 1999 D.C. Circuit Court case, however, questioned the EPA's authority to set the new ozone and particulate matter standards. Because of this case, the EPA had no authority to implement the eight-hour standard, which applied once the one-hour standard was attained. In order to provide some form of ozone standard, the EPA reinstated the one-hour ozone standard nationwide. In doing this, the EPA designated attainment classifications for nearly 3,000 counties, including Suffolk County, which has been reclassified as *serious nonattainment*. At the Chelsea monitoring station (1.5 miles northwest of Logan), the last exceedance of the 1-hour O_3 standard occurred in 1991. On February 27, 2001, the Supreme Court rejected the D.C. Circuit Court's findings and upheld the EPA's authority to set the revised O_3 and $PM_{2.5}$ standards. However, the revised standards are not immediately subject to implementation because the Supreme Court is requiring the EPA to revisit its implementation policy, specifically for O_3. The EPA must develop a reasonable interpretation of the non-attainment implementation provisions of the CAA.

19 Year for which information is most recently available.
20 Year for which information is most recently available.
21 *Community Impact of Aircraft Particle Emissions*, prepared by TRC Environmental Corporation, presented to Massport, Logan International Airport, January 1997.
22 *Soot Deposition Study: Logan Airport and Surrounding Communities*, prepared for Massport, prepared by: KM Chng Environmental, Inc., January 1997.

Table 5.4-4
Attainment/Non-Attainment Designations for the Boston Area[1]

Pollutant	Designation	Classification
Carbon monoxide (CO)	Attainment	N/A
Sulfur dioxide (SO_2)	Attainment	N/A
Ozone (O_3)	Non-attainment (1)	Serious
Nitrogen dioxide (NO_2)	Attainment	N/A
Particulate matter (PM_{10})	Attainment	N/A
Lead (Pb)	Attainment	N/A

1 Designated area is Boston-Lawrence-Worcester.
N/A not applicable.

The Massachusetts State Implementation Plan (SIP) for O_3 identifies the strategies that have been, and will be, implemented to reduce emissions of VOCs and NOx to target levels needed to achieve compliance. In the Boston area, the Boston Metropolitan Planning Organization (MPO) works closely with the MA DEP to develop and update the SIP, Rate-of-Progress Plans and other supporting materials. In addition, the MPO is responsible for implementing the emissions reduction strategies presented in the SIP in this area. As a member of the Boston MPO, Massport plays a key role in this process. For example, all of Massport's planning efforts are developed to be consistent with the policies in the SIP including the East Boston/Logan parking freezes.

5.4.2 Sources of Air Emissions

5.4.2.1 Airport-Related Sources of Air Emissions

In general terms, the primary sources of air emissions at major air carrier airports such as Logan are aircraft, ground service equipment (GSE), and motor vehicles. Other sources include fuel storage facilities and transfer operations, a variety of other stationary sources (e.g., space heating, emergency electrical generation, food preparation), and construction activities. Table 5.4-5 provides a listing of air emissions sources at Logan, the pollutants emitted, and their general characteristics.

These emissions are described in greater detail in the Airside Project Draft EIS/EIR, Section 5.3.2.1. The amounts of emissions generated by these sources are given later in Sections 5.4.3.2 and 6.4.2 in the form of existing and future-year air emission inventories.

5.4.2.2 Modeled Emissions

For the purposes of evaluating the air quality impacts attributable to a project, it is important to distinguish between "direct" and "indirect" emissions. Direct emissions are generally defined as air pollutants, or their precursors that are caused directly by the project, including its construction, and occur at the same time and place as the action. Aircraft taxi, takeoff roll, landing, and delay periods; GSE; fuel storage and distribution facilities; on-site motor vehicle traffic; and stationary point sources (i.e., steam boilers and electrical generators) are all potential generators of direct emissions.

By comparison, indirect emissions are caused by the project, but

- Occur later in time,
- Are removed in distance, and
- Are reasonably foreseeable.

Examples may include off-site airport-related motor vehicle traffic. All other emissions, such as those from non-airport motor vehicle traffic or ancillary development are considered incidental, or "background" as they are not caused by the project and are not controllable or anticipated by the sponsor.

Table 5.4-5
Sources of Air Emissions

Sources	Emission(s)	Characteristics
Aircraft	Carbon monoxide Volatile organic compounds Nitrogen oxides Particulate matter	Exhaust products of fuel combustion which vary greatly depending on aircraft engine type, power setting, and period of operation. Except for short periods of take-off and approach, aircraft altitude precludes measurable off-site ground level impacts.
Ground service vehicles and equipment	Carbon monoxide Volatile organic compounds Nitrogen oxides Particulate matter	Exhaust products of fuel combustion (diesel, gasoline, and natural gas) from service trucks, tow tugs, belt loaders, and other portable equipment.
Fuel storage and transfer facilities	Volatile organic compounds	Formed from the evaporation and vapor displacement of fuel from storage tanks and fuel transfer facilities. Emissions vary with fuel use, type of storage tank, refueling method, fuel type, vapor recovery system, climate, and ambient temperature.
Space heating and emergency electrical generation facilities	Carbon monoxide Volatile organic compounds Nitrogen oxides Particulate matter Sulfur dioxide	Exhaust products of fossil fuel combustion from boilers dedicated to indoor heating requirements and emissions from incinerators used for waste reduction. Emissions are permitted by MA DEP, and are generally well controlled with operational techniques and post-burn collection methods.
Motor vehicles	Carbon monoxide Volatile organic compounds Nitrogen oxides Particulate matter Sulfur dioxide	Exhaust products of fuel combustion from passenger, employee, and cargo traffic approaching, departing, and moving about the airport site. Emissions vary greatly depending on vehicle type, distance traveled, operating speed, and ambient conditions. On-site emissions are confined to access/egress roadways and parking facilities.
Construction activities	Carbon monoxide Volatile organic compounds Nitrogen oxides Particulate matter Sulfur dioxide	Dust (e.g., soil and concrete) generated during construction and land-clearing activities released into the air by wind and machinery. The amount of particulate emissions varies with the material type, the amount of area exposed, wind, rain, and the use of Best Management Practices to reduce fugitive dust. Also includes emissions from construction vehicle exhaust.

5.4.2.3 Previous Air Quality Impact Assessments

The assessment of air quality impacts associated with Logan is an ongoing process that is continually updated. Table 5.4-6 summarizes some important mileposts in this process.

The results contained in these studies compare favorably with each other largely because forecasts of aircraft operations were generally consistent. Any differences in the results are attributable to updated emission factors, fleet mix characteristics, and/or ground-based delay periods. Moreover, there were no significant increases in airport-related emissions and no predicted violations of any NAAQS.

Table 5.4-6
Previous Air Quality Impact Assessments

Project/Assessment	Analyses
Logan Airside Project Improvements Feasibility Study - Phase 1 Report	Simulation of 1993 and 1999 conditions using the Logan Dispersion Modeling System to predict ambient levels of CO, HC, NO_2, PM_{10}, and odor at six community receptors.
Logan GEIR 1994/5; Annual Updates 1993 and 1996-98	Annually updated air emission inventories of VOCs, NOx, and CO from all Logan sources and calculated both on and off the airport for the years 1987, 1990, 1993-97, 1999 and 2010.
1991/1992 Final Logan GEIR (1993)	In addition to analysis listed above, microscale atmospheric dispersion modeling for CO at several Logan receptors and receptors in the surrounding communities.
Logan Growth and Impact Control (LOGIC) Study(1993)	Emission inventories and atmospheric dispersion modeling for 1987 and 2010.
West Garage Project Draft and Final EIR (1994 and 1995)	Emission inventories for 1993, 1996, and 1999; microscale CO dispersion modeling for landside motor vehicle traffic.
International Gateway Draft and Final EIR and Environmental Assessment (1996)	Used future year emissions inventories of all Logan airside-related sources and determined that reduced hardstand use resulted in air quality benefits.

5.4.3 Existing and Historic Air Emissions and Dispersion

In order to establish a benchmark of existing air quality impacts associated with Logan, an air emission inventory and atmospheric dispersion modeling was conducted for 1993 conditions. This procedure is consistent with FAA guidelines for preparing an EIS and meets the MEPA requirements for this project. Essentially, this analysis permits the comparison of future year forecasts to current year conditions.

The approach for conducting this work is summarized below followed by separate presentations of the emission inventory and dispersion modeling results.

5.4.3.1 Assessment Approach

The approach for quantifying the Airside Project 1993 baseline air quality conditions was subdivided into two elements: an emissions inventory and atmospheric dispersion modeling.

The emissions inventory serves several purposes: First, the various sources of air emissions identified in the Airside Project Draft EIS/EIR Section 5.4.2.1 (i.e., aircraft, ground service equipment, motor vehicles, fuel facilities, etc.) are individually quantified, thus apportioning the relative contribution of each source. Second, the results are compared to other previous analyses discussed in the Airside Project Draft EIS/EIR Section 5.4.2.3 in order to insure consistency among the various assessments. Third, when compared to future year conditions (presented in the Airside Project Draft EIS/EIR Section 6.4.2) the effect of growth and, more importantly, the Airside Project on air emissions can be evaluated. Finally, the emissions inventory serves as important input to the atmospheric dispersion model.

Because the emission inventory results are not directly comparable to the NAAQS, atmospheric dispersion modeling is also conducted. Using the emission inventory data, combined with a full year of meteorological data, predictions of ambient pollutant concentrations are made.

The Logan Dispersion Modeling System and FAA/EPA methods were used to develop the emission inventories and perform the dispersion modeling. The modeling input parameters, assumptions and assessment methods are described in detail in Airside Project Draft EIS/EIR Section 6.4.

5.4.3.2 1993 Historic Modeled and 1998 Actual Condition Emissions Inventories

This section presents the results of the emissions inventory for the 1993 Historic Modeled Condition, followed by the results of the emissions inventory for the 1998 Actual Condition.

The results of the Airside 1993 Historic Modeled Condition emissions inventory for Logan are contained in the Airside Project Draft EIS/EIR Table 5.4-7. For comparison, the GEIR results for 1993 are also shown. The results of the *1998 Annual Update* Emissions Inventory are shown in Table 5.4-8. Given in units of kilograms (kg) per day (1 kg = 2.2 pounds), emission totals are given for the pollutants CO, NOx, and VOCs for both 1993 and 1998 and for PM_{10} in 1993. For ease in viewing these data, Figures 5.4-2 and 5.4-3 provide illustrative summaries in the form of pie-charts of the 1993 and 1998 Emissions Inventories, respectively.

As shown for both 1993 and 1998, aircraft and GSE constitute the two largest sources of CO at Logan, each representing between 41 and 44 percent, respectively, of the total in both years. Airport-related motor vehicles, which represent the third largest CO source, contributed ten percent of the total CO in both 1993 and 1998. Other sources are negligible in both years.

Aircraft also constitute the majority (approximately 75 and 80 percent, respectively) of the NOx emissions in 1993 and 1998. This is primarily attributable to high-power operating modes (i.e., take off and climbout). GSE and airport-related motor vehicles are again the second and third largest sources of NOx emissions, respectively, in both years.

Table 5.4-7
1993 Modeled Condition Emissions Inventory for Logan (kg/day)[1]

Source Categories	CO	NOx	VOC	PM_{10} [2]
Aircraft [3]	**7,060**	**3,811**	**2,410**	**208**
Service Vehicles	**6,613**	**651**	**565**	**12**
Airport-Related Motor Vehicles				
Parking/Curbside	879	25	63	<1
On-airport motor vehicle sources	1,465	237	215	13
Total Motor Vehicle Sources	**2,344**	**262**	**278**	**13**
Other Sources				
Fuel storage/handling	0	0	408	0
Miscellaneous sources [4]	26	278	5	8
Total Other Sources	**26**	**278**	**143**	**8**
Total Airport Sources	**16,043**	**5,002**	**3,666**	**241**
(tpy)	**(6,454)**	**(2,012)**	**(1,475)**	**(97)**
1993 Data from *GEIR* [5]	**17,704**	**5,964**	**4,501**	**N/A**
(tpy)	**(7,122)**	**(2,399)**	**(1,811)**	

1 For consistency with previous analyses, units of kg/day are used. 1 kg/day is equal to 0.4023 tons per year (tpy).
2 Assumes all PM emissions are PM_{10}
3 Includes air carriers, commuter, cargo, and general aviation aircraft throughout the entire landing/take-off cycle (i.e., approach landing, taxi-in, taxi-out, take-off, and climb-out, including any delay periods).
4 Includes the central heating/cooling plant and emergency electricity generation.
5 *1997 Annual Update, Logan Airport GEIR*, August 1998. Not included in *1998 Annual Update.*

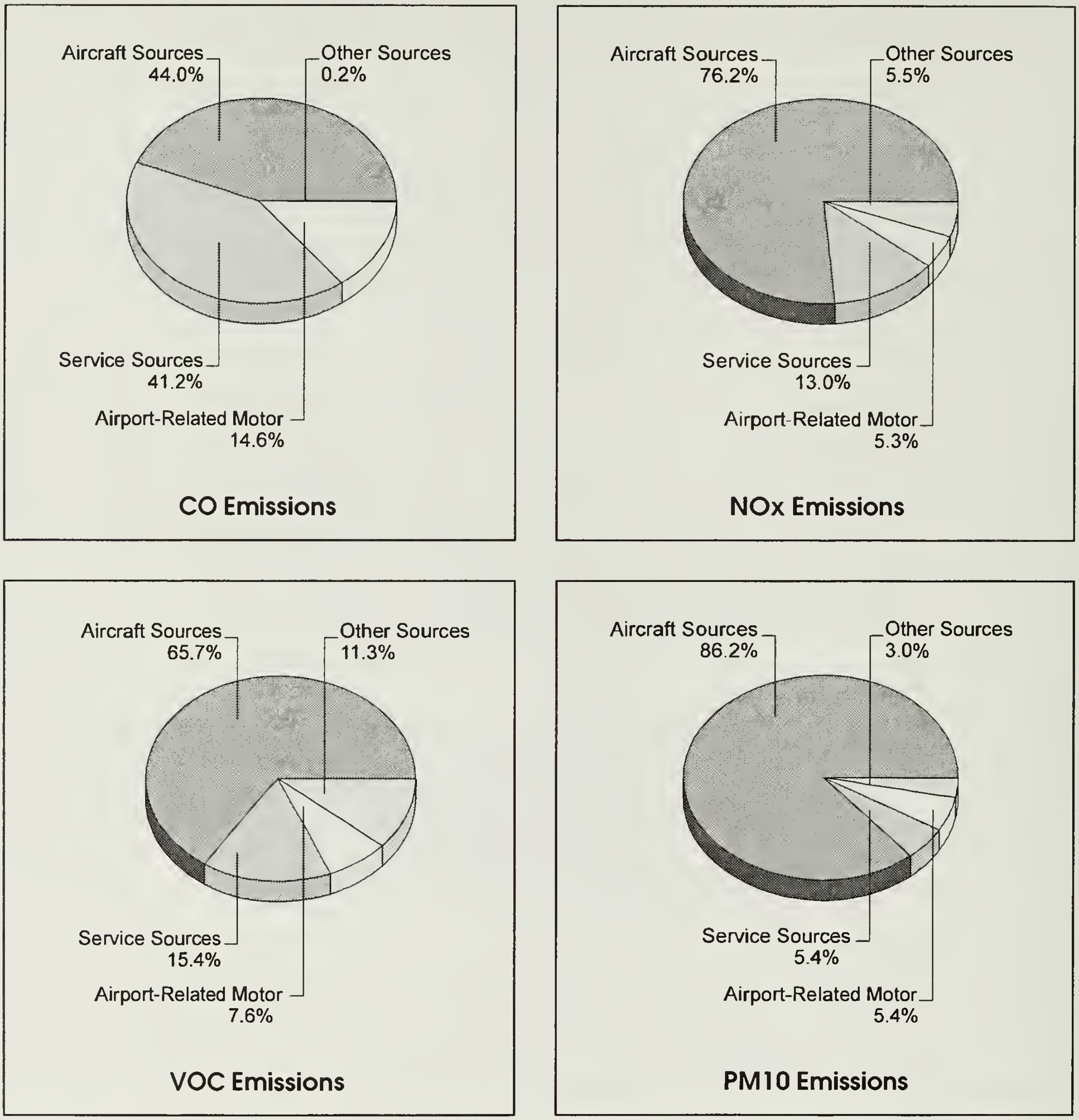
Table 5.4-8
***1998 Annual Update* Emissions Inventory for Logan (kg/day)**

Source Categories	CO	NOx	VOC
Aircraft [1]	**5,577**	**4,685**	**1,648**
Service Vehicles [2]	**5,787**	**608**	**496**
Airport-Related Motor Vehicles			
Parking/Curbside	587	24	102
On-airport motor vehicle sources [3]	1,332	252	212
Total Motor Vehicle Sources	**1,919**	**276**	**314**
Other Sources			
Fuel storage/handling	0	0	372
Miscellaneous sources [4]	37	284	2
Total Other Sources	**37**	**284**	**374**
Total Airport Sources	**13,320**	**5,853**	**2,832**
(tpy)	**(5,359)**	**(2,355)**	**(1,139)**

1 Includes air carriers, commuter, cargo, and general aviation aircraft throughout the entire landing/take-off cycle (e.g., approach landing, taxi-in, taxi-out, take-off, and climb-out, including any delay periods).
2 Includes vehicles and equipment converted to alternative fuels.
3 Includes through traffic from the Ted Williams Tunnel not destined for Logan Airport.
4 Includes the Central Heating and Cooling Plant and emergency electricity generation.

Similarly, aircraft emissions of VOCs represent 65 and 58 percent of the airport total in 1993 and 1998, respectively, followed by GSE at 15 percent in 1993 and 18 percent in 1998. Fuel storage and transfer operations, classified under "other sources," emit roughly 11 percent of the total VOCs in 1993 and 13 percent in 1998. Emissions of PM_{10} in 1993 are generated primarily by aircraft (86 percent) followed by motor vehicles, GSE, and other sources.

When compared to the 1993 emissions inventory as presented in the *1997 Annual Upda*te, the Airside Project results are lower. This difference arises from the availability of updated emission factors for aircraft, service vehicles, and motor vehicles and the refined assessment of airfield operational conditions developed in support of this Airside Project Supplemental DEIS/FEIR

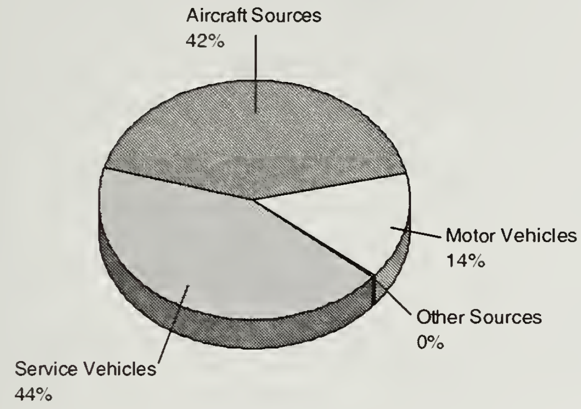


massport

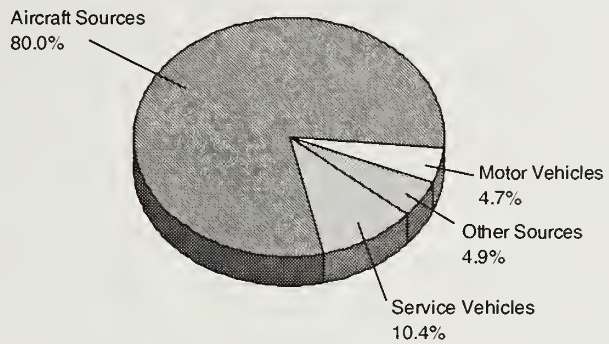
Figure 5.4-2

1993 Baseline Emission Inventory

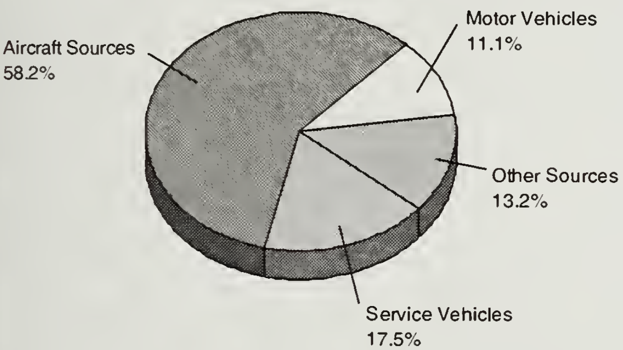
7466-FIG-5.4-2.p65



CO Emissions



NOx Emissions



VOC Emissions

Figure 5.4-3

1998 Annual Update Emission Inventory

Off-site motor vehicle emissions associated with Logan were computed separately and are presented in Table 5.4-9. Representative of "indirect emissions," this source is subdivided into two categories: (1) Motor vehicle emissions generated on local streets within the East Boston Area and (2) emissions generated by motor vehicles traveling to and from the airport on major regional highways and arterials.[23] For comparative purposes, emissions attributable to non-airport-related motor vehicles on these same roadway networks are also shown. These off-site motor vehicle emissions were computed from traffic data contained in the *1994/95 GEIR* and MOBILE5b emission factors.

Table 5.4-9
1993 Off-site Motor Vehicle Emissions (kg/day)

Source Categories	CO	NOx	VOC	PM_{10} [2]
East Boston Study Area[1]				
Airport-related motor vehicles	1,162	158	166	23
Other vehicles	3,413	410	476	23
Total East Boston Study Area	**4,575**	**568**	**642**	**32**
Regional Study Area[3]				
Airport-related motor vehicles	5,195	1,300	765	61
Other vehicles	61,231	15,244	9,019	711
Total Regional Study Area	**66,426**	**16,544**	**9,784**	**772**
Total airport-related vehicles	6,357	1,458	931	70
Total other vehicles	64,644	15,654	9,495	734
Total All Vehicles	**71,001**	**17,112**	**10,426**	**804**
(tpy)	**(28,564)**	**(6,884)**	**(4,194)**	**(323)**

1 Airport-related motor vehicles using local East Boston streets.
2 Assumes all PM emissions are PM_{10}
3 Airport-related motor vehicles on major regional arterials.
Note: Not conducted for the *1998 Annual Update.*

23 The regional study area for the air quality assessment includes access routes to Logan Airport and major highways that are significant carriers of airport-related traffic. Roadways include Route 1 (north of Boston); I-93/Route 3 (south of Boston); and I-90/ Massachusetts Turnpike (west of Boston). The limits of the regional study area for vehicle travel analyses are defined by the intersection of these radial highways with I-95/Route 128.

5.4.3.3 Dispersion Model Results for 1993

For the purposes of this assessment, ambient levels of air pollutants were predicted at 12 community sites (receptors) in the vicinity of the airport. (See Figure 5.4-1 for receptor locations.) Using the Logan Dispersion Modeling System (LDMS) and 1993 local meteorological data, the model results were combined with appropriate "background" concentrations to obtain these levels. For ease in assimilating these findings, only the highest levels predicted from among all 12 receptors are reported in Table 5.4-10. Even these fall below the NAAQS. Appendix F provides a complete presentation of dispersion modeling results. A comparison between LDMS and the FAA's Emissions Dispersion Modeling System (EDMS) is provided in Section 6.4.1, of Chapter 6, Environmental Consequences.

Exceptions to this reporting technique are the reported ozone and odor indicator levels, which are given as spatially averaged values. The highest spatial average of 24-hour VOC concentrations (as ozone indicators) are not predicted to be higher than 20 (μg/m3). One-hour VOC levels (as odor indicators) are shown to be below 121 (μg/m3). There are no NAAQS for these pollutants. Rather, these results will be used in Section 6.4 for comparison to future year conditions with and without the Preferred Alternative.

Table 5.4-10
1993 Dispersion Model Results Summary

Pollutant/Parameter[1]	Community Air Concentration ($\mu g/m^3$)	Air Quality Standard ($\mu g/m^3$)
CO, 1-hour [1]	6,840	40,000
CO, 8-hour [1]	3,311	10,000
NO_2, 1-hour [1]	257	320
NO_2, annual, highest	60	100
PM_{10}, 24-hour [1]	50	150
PM_{10}, annual, highest	23	50
Ozone indicator, Total VOCs, 24-hour, spatially-averaged highs	20	N/A
Odor indicator, Aircraft Idle Mode VOCs, 1-hour, spatially-averaged highs	121	N/A

1 The "highest second high" data are provided as the maximum value determined by taking the second highest value of the dispersion modeling results at each receptor and then reporting the maximum value for that data set of twelve. (Background levels are included).

N/A There are no standards applicable to this pollutant, which is used as an indicator of potential ozone or odor formation.

Note: Not conducted for the *1998 Annual Update*.

5.5 Biotic Communities

Biotic Communities refers to the vegetation communities, water resources, and wildlife habitats of an area. The ecosystems of the project area consist primarily of the upland vegetative communities associated with the Logan airfield. The urban character of the project area limits the extent of upland vegetation, and hence, wildlife habitat.

5.5.1 Vegetation

Vegetation occurring on the airfield, including the area of the Centerfield Taxiway and other vegetated areas proposed for construction, is primarily herbaceous, with some areas of sparse vegetation and bare ground. Herbaceous vegetation is regularly mowed to a maximum height of approximately 6 inches. The plant community consists of grasses and forbs characteristic of lawns, fields, and upland coastal habitats.

5.5.2 Wetlands

While federal and state-regulated wetlands do occur along the perimeter of the airfield (see Figure 5.1-2), no elements of the Airside Project improvements, require work in these wetland resource areas, although certain of the alternatives would unavoidably require construction in the buffer zone.

The rock-faced bulkhead that forms the southern boundary of Logan is considered a Coastal Bank under the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40) and associated regulations (310 CMR 10.00 et. seq.). As defined at 310 CMR 10.30(2), Coastal Banks are "the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland."

The coastal bank is significant to storm damage prevention and flood control. At Logan, this coastal bank was initially constructed to confine materials placed as fill for the airfield. The bank continues to provide storm damage protection along this edge of the airfield. The top of the bank is above the 100-year flood elevation, which is 10 feet above mean sea level for Boston Harbor.

Land within 100 feet of the coastal bank is designated as the "buffer zone," and extends the length of the coastal bank for the perimeter of the airfield. In the area of construction for proposed unidirectional Runway 14/32, the buffer zone presently consists of the airfield perimeter roadway, guard rail, taxiway, and paved runway safety area. Limited areas of grass are also present between the perimeter road and the taxiways and safety areas.

5.5.3 Wildlife

The airfield is an urbanized environment with herbaceous vegetation between paved surfaces such as runways, taxiways, the perimeter road and aprons which is isolated from off-site vegetation by airport facilities and East Boston streets and neighborhoods. The airfield is only accessible to wildlife that is able to fly, travel through an urban environment, or swim via Boston Harbor.

5.5.3.1 Typical Species

As a result of the developed nature of the airfield, difficulty of access and the lack of diversity in cover types, airfield wildlife is low in diversity and predominantly avian. However, some mammals such as muskrats, mice, rats and other rodents have been observed on the airfield.

With regard to avian species, the Logan airfield provides a relatively large expanse of grassland habitat in a region of the country (i.e., New England) dominated by forests. As a result, seasonal migrants associated with this habitat type, such as lapland longspur, snow buntings, killdeer, horned lark, upland sandpipers, and savannah sparrows, have been recorded on the Logan airfield. Snowy owls (*Nyctea scandiaca*) are common winter visitors. A wide range of waterfowl, waders, and shorebirds uses the adjacent marine habitat of Boston Harbor and areas around the airport perimeter that are not seawall. Table 5.4-2 of the Airside Project Draft EIS/EIR provides a list of bird species observed at Logan.

5.5.3.2 Endangered and Threatened Species

Based on correspondence with the U.S. Fish and Wildlife Service (USFWS) dated April 1, 1997, no federal-listed endangered and threatened plant or animal species are known to occur on the Logan airfield. There are also no state-listed plant species known to occur at Logan. (A copy of the letter from the USFWS is included in Appendix G) A copy of the most recent USFWS list dated December 8, 2000, indicates that while the statewide list has been modified, the initial 1997 findings remain relevant.

The upland sandpiper (*Bartramia longicauda*), a state-listed endangered animal species, is associated with the Logan airfield, and this species accounts for mapped habitat shown in the Massachusetts Natural Heritage and Endangered Species Program (NHESP) Massachusetts Natural Heritage Atlas (2000-2001 Edition).

For several years, upland sandpipers have been observed on the airfield during the spring migratory season, breeding and nesting periods, and through the summer. Upland sandpipers typically arrive at Logan airfield in April or early May, although they may arrive as early as the beginning of March, and were observed to nest on the airfield in 1990 and 1996. Since 1996, upland sandpiper have been observed seasonally.

Table 5.4-2 in the Airside Project Draft EIS/EIR summarized field observations for this species made during 1990 and in 1996. The 1990 field observations were made as part of the Central Artery/ Tunnel (CA/T) Project's siting studies for the Governors Island dredged materials storage area.

5.6 Water Quality

This section discusses Boston Harbor water quality and describes Logan's existing drainage system and water quality resulting from existing operations.

5.6.1 Boston Harbor

Boston Harbor, which surrounds Logan on three sides, is classified by the Massachusetts Department of Environmental Protection (DEP) as Class SB water. As defined at 314 CMR 4.00, Class SB waters are to be suitable for primary contact recreation (swimming, boating and other water activities), fishing, industrial water uses and the protection, propagation and growth of fish and wildlife. Many of the intertidal flats surrounding Logan are used for the harvesting of shellfish by Master Diggers. However, because of the presence of combined sewer overflows in the vicinity (not associated with Logan), the shellfish must be depurated before sale. More acres of shellfish beds have recently opened to harvesting due to the construction of combined sewer overflows (CSO) treatment facilities at certain outfall points in Boston Harbor by the Massachusetts Water Resources Authority (MWRA). All of these CSOs are non-Massport structures located off the airport. Water quality has also improved due to efforts by the Boston Water & Sewer Commission to investigate and remove illegal sewage connections by others to the storm drainage systems, and to improve the sewerage collection and treatment system around the harbor and the remainder of the MWRA Service Area. Logan's sewer system does not have any illegal connections to the storm drainage system.

The MWRA collects and analyzes water quality data at various locations around Boston Harbor, three of which are in the general vicinity of Logan. Data from these locations were reviewed and analyzed as the basis for characterizing harbor water quality adjacent to Logan. (See Table 5.5-1 in the Airside Project Draft EIS/EIR) The data indicate that the Class SB water quality standards are being met under average conditions.

5.6.2 Airport Drainage and Water Quality

Stormwater runoff from the airfield discharges to Boston Harbor through a complex drainage system. Airfield runoff flows across the grass infield to catch basins located primarily in the areas between the runways and taxiways. The catch basins are connected by underground drain lines leading to a series of outfalls along the perimeter of the airfield which discharge to Boston Harbor. Groundwater also

discharges through this drainage system in those areas of the airfield where an under drain system exists.
There are also four principal discharge points (West Outfall, Porter Street Outfall, Maverick Street Outfall and North Outfall) which drain the terminal areas and portions of the airfield. These four Logan outfalls are permitted through the EPA's National Pollutant Discharge Elimination System (NPDES) program.

A simplified illustration of the drainage system for the terminal and airfield areas is shown in Figure 5.6-1. As illustrated in the figure, much of the terminal and apron area and portions of the southwest corner taxiway system presently discharges to the West Outfall. The West Outfall incorporates pollution control devices, including a mechanically cleaned bar screen, oil skimmer, grinder pump, sedimentation tank, and an oil/water separator. Oil from the separator is collected in an off-line waste oil storage tank. The remainder of the airfield areas included in the Preferred Alternative drain to the perimeter outfall system.

Massport monitors the quality of its major terminal area discharges as part of the NPDES Permit (Permit No. MA 0000787) that was issued by the U.S. EPA for the four main airport outfalls identified above. Massport and the Logan tenants applied in October 1992, as co-applicants, for an individual NPDES Permit for the entire airport which would supersede the existing permit. The U. S. EPA is expected to issue the draft permit in 2001. In addition, a NPDES Permit (Permit No. MA 0032751) has been issued for discharge from the water treatment facility at the Fire Training Facility.

5.6.3 Airport Deicing

Deicing activities at Logan include both anti-icing, which is to prevent snow and ice buildup, and deicing, which is the removal of snow and/or ice once it has built-up on the ground or on an aircraft. (The term "deicing" as used in this document refers both to anti-icing and deicing.) Massport is responsible for operations relating to the deicing of roadways, runways, and taxiways. Roadways at Logan are treated using salt and sand similar to those used on other public roadways. The runways and high speed turn-offs are deiced by applying a liquid mixture of ethylene glycol, urea, and water in an approximate ratio of 50 percent ethylene glycol, 25 percent urea, and 25 percent water. The rates of application on the runways and taxiway exits are in the range of 0.5 to 1.5 gallons per 1,000 square feet, depending on ground conditions, air temperature, precipitation and other weather factors. Occasionally, taxiways may be deiced in a similar manner, under controlled applications. Aircraft deicing practices and volumes will not change as a result of the Airside Project Improvements.

In the Logan NPDES application, Massport assessed the environmental impact of the discharge of deicing materials to Boston Harbor. The assessment resulted in the conclusion that the deicer applied to the runways does not significantly affect water quality because runway runoff flows overland upgradient of the catch basins; the approximately 50 outlets are dispersed around the airfield; and the glycol deicing compounds are relatively harmless with respect to aquatic toxicity (U.S. Fish and Wildlife Service) and quickly biodegrade. The combination of overland runoff and a

large number of small discharge locations helps to attenuate and disperse the deicing compounds used on the airfield.

During preparation of the NPDES application, runoff samples were collected from the drainage system (Outfall A-12) at the departure end of Runways 22R and 22L (see Figure 5.6-1), and analyzed for a number of water quality parameters. The sampling results related to the deicing activities were briefly summarized in Table 5.2-2 of the Airside Project Draft EIS/EIR.

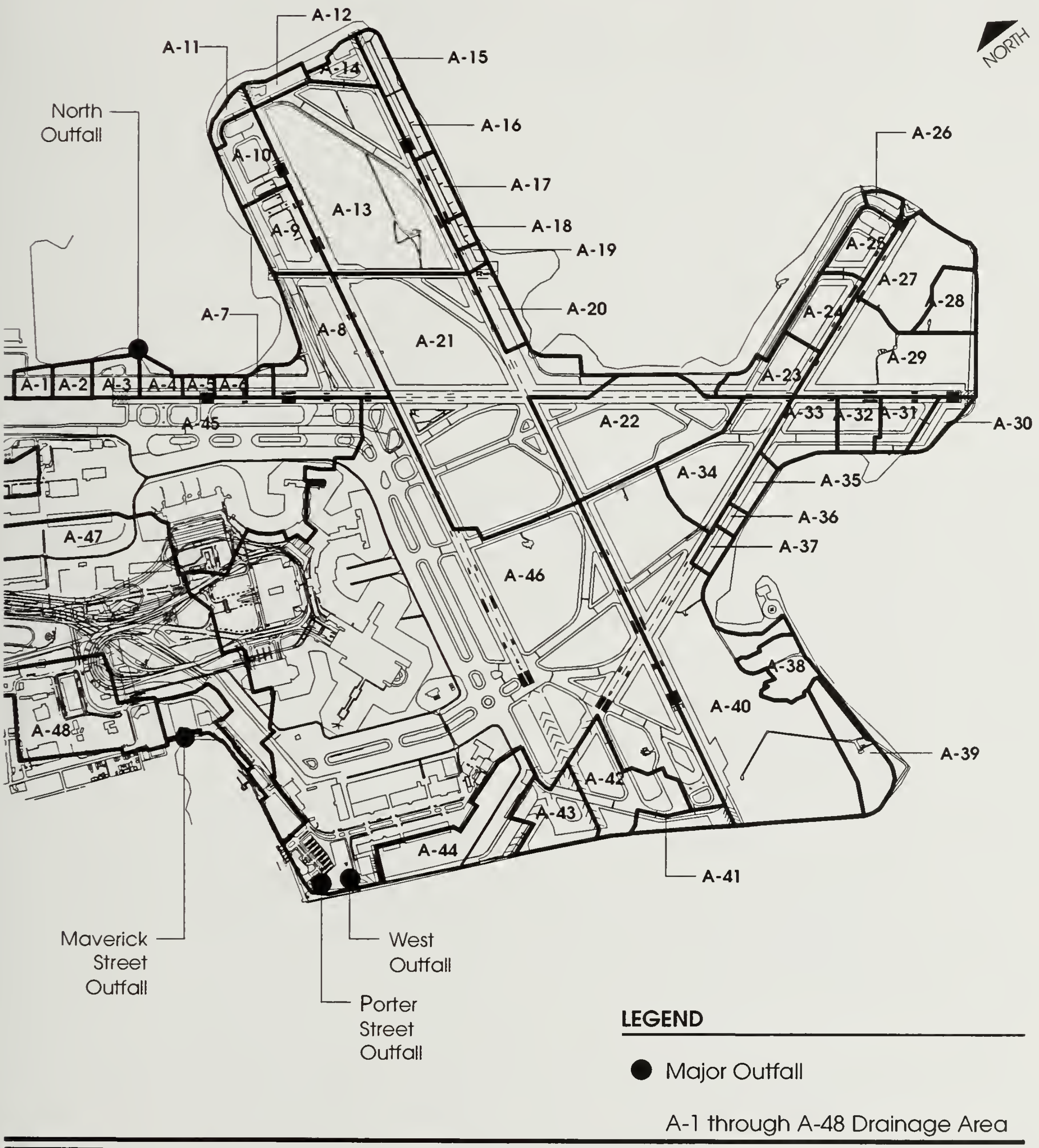
5.7 Soil/Sediment Characterization

This section contains information on the existing quality of soil and subgrade materials that may be removed or relocated during runway and taxiway construction. It also provides a description of the characteristics of the CA/T Project materials which are managed on Governors Island. Construction will not take place in Boston Harbor and therefore, marine sediment quality is not discussed.

5.7.1 Existing Soil Quality

Construction of the runway and taxiway improvements will require the excavation of unsuitable or excess soils. The Airside Project Draft EIS/EIR contained preliminary information on soil quality based on existing data from previous airfield soil sampling programs. Following the Airside Project Draft EIS/EIR, a soil pre-characterization program was conducted by Massport in July and August 1999 in areas where excavation would be required for construction. The goal of the program was to develop both structural and environmental information to assist in the design and construction of the various airfield improvements. Structural soil data will be used for the engineering design and the environmental data will indicate any areas of possible contamination and provide guidance on reuse of the excavated materials, where appropriate.

The soil pre-characterization program involved the installation of 93 soil borings within or in proximity to airside areas proposed for construction of runway and taxiway improvements. Soil samples were collected at three depths from each of the 93 boring locations: 0 - 2 feet below ground surface, 5-7 feet below ground surface, and 8-10 feet below ground surface. In addition, soil borings on Governors Island (B-46, B-47, B-50 and B-51) were installed to a depth of 20 feet below ground surface due to the presence of fill in that area. None of these soil borings were within of 100 feet of wetlands or waterways regulated under the Massachusetts Wetlands Protection Act.



massport

Figure 5.6-1
Existing Drainage Areas

Soil samples were analyzed at a DEP-certified analytical laboratory for the following parameters:

- Volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH), DEP method 98-1
- Priority pollutant metals, EPA methods 6010/7471/7740/7840
- Pesticides and polychlorinated biphenyls (PCBs), EPA Method 8080
- Soil conductivity, EPA method 120.1/9050

The Massachusetts Contingency Plan (MCP) contains categories for reporting contamination of oil and hazardous materials. These reporting categories are based on land use and groundwater use. Reporting Category S-1 applies to soil that is within 500 feet of dwellings, residentially zoned property, schools, playgrounds, recreational areas, parks and within areas that have been designated as part of groundwater aquifer supply zones. Reporting Category S-2 is for all other land areas. For Logan, the S-2 Category applies. If soil contamination levels exceed the applicable Reportable Concentrations (RC) for oil and hazardous materials, they are considered to be regulated and must be reported to the DEP.

The S-1 and S-2 categories have specific contamination concentrations for oil and hazardous materials. The laboratory results were compared to S-2 Reporting Concentrations established in the MCP at 310 CMR 40.1600. The Toxicity Characteristic Leaching Procedure (TCLP) test is one measure of the toxicity of a sample and upon exceeding regulatory limits it is determined to be TCLP hazardous. The data indicate that the soil was not found to be TCLP-lead hazardous. There are, however, areas where the DEP's Reportable Concentrations are exceeded for various chemical constituents. The analytical results of the soil pre-characterization program are summarized in Table 5.7-1 and are described below.

5.7.1.1 Runway 14/32

The soil pre-characterization data indicate that the soil under the footprint of the proposed unidirectional Runway 14/32 does not exceed the Reportable Concentrations for S-2 soil.

Table 5.7-1
Airfield Soil Data Summary for Exceedances of S-2 Reportable Concentrations

Soil Contaminants	Reportable Concentration S-2 Soil	Proposed Runway 14/32	Proposed Centerfield Taxiway	Proposed Taxiway November Realignment	Proposed Southwest Corner Taxiway Realignment
Total Petroleum Hydrocarbons (mg/kg)					
Volatile Petroleum Hydrocarbons		No Exceedance	No Exceedance	No Exceedance	No Exceedance
Extractable Petroleum Hydrocarbons					
Aliphatic Hydrocarbons		No Exceedance	No Exceedance	No Exceedance	No Exceedance
Polynuclear Aromatic Hydrocarbons (PAHs)		No Exceedance			
Benzo(a)anthracene	1	No Exceedance	ND-19[1]	ND-5.8	ND-4.7
Chrysene	10	No Exceedance	ND-18	No Exceedance	No Exceedance
Benzo(b)flouranthene	1	No Exceedance	ND-20	ND-12	ND-6.7
Benzo(a)pyrene	0.7	No Exceedance	ND-22	ND-6.3	ND-4.5
Dibenzo(a,h)anthracene	0.7	No Exceedance	ND-3.8	No Exceedance	No Exceedance
Indeno(1,2,3-c,d)pyrene	1	No Exceedance	ND-13	ND-2.6	ND-2.1
Priority Pollutant Metals (mg/kg)					
Beryllium	0.8	No Exceedance	<0.59-1.2	No Exceedance	No Exceedance
Polychlorinated Biphenyls (mg/kg)	1	No Exceedance	No Exceedance	No Exceedance	No Exceedance
Pesticides (mg/kg)					
Dieldrin	0.04	No Exceedance	ND-2.1	ND-0.62	ND-3.1

1 Not Detectable to-19mg/kg

5.7.1.2 Centerfield Taxiway

The soil pre-characterization data indicate that soil underlying the proposed Centerfield Taxiway contains variable levels of contamination. The soil data indicate that no volatile compounds were present nor were any of the aliphatic fractions from the total petroleum hydrocarbon tests. The soil was found to exceed the S-2 Reportable Concentrations (RC S-2) for the polynuclear aromatic hydrocarbons, as determined in the EPH analysis. The PAH contamination was found from Taxiway Echo north to Taxiway Romeo. Beryllium was the only priority pollutant metal to exceed the RC S-2. This condition was found adjacent to Runway 15L/33R and between Taxiways Echo and Charlie. Lead in the soil was found to exceed the 100 mg/Kg TCLP trigger level by a slight amount (110 to 120 mg/kg) at three scattered locations. The results of the TCLP testing indicate that the soil did not exceed the TCLP regulatory limit of 5.0 mg/l for lead and is, therefore, not hazardous. The insecticide dieldrin was found in the soil at 8 locations. It is believed that the dieldrin originated from historical mosquito control programs. The soil was not found to contain polychlorinated biphenyls.

5.7.1.3 Taxiway November Realignment

Soil underlying the area for the realignment of proposed Taxiway November was found to be contaminated in excess of the Reportable Concentrations for S-2 soil with four polynuclear aromatic hydrocarbon (PAH) compounds, and the insecticide dieldrin. This contamination was only found in the surface soils (0-2 ft). The soil data indicate that no volatile compounds were present nor were any of the aliphatic fractions from the total petroleum hydrocarbon tests.

5.7.1.4 Southwest Corner Taxiway Reconfiguration

The soil sampling and analysis data indicate that the soil in the area of the proposed Southwest Corner Taxiway Reconfiguration contains concentrations of four PAH compounds and the insecticide dieldrin which exceed the Reportable Concentrations for S-2 soil. The soil data indicate that no volatile compounds were present nor were there any of the aliphatic fractions from the total petroleum hydrocarbon tests.

5.7.2 Governors Island Central Artery/Tunnel Materials Storage Site

Section 5.6.2 of the Airside Project Draft EIS/EIR presented an extensive discussion of the temporary Massachusetts Highway Department (MassHighway) Central Artery/Tunnel project soil stockpile at Governors Island. The discussion was included because at that time it appeared that a portion of the stockpiled materials would need to be relocated if unidirectional Runway 14/32 was to be constructed.

In 1999, Massport was approached by the Court-appointed Receiver of the Rubchinuk Landfill in Middleton, Massachusetts to assist in the closure of the landfill in accordance with a Landfill Closure Plan approved by the DEP. As a result of this request, in June 1999, Massport developed a third amendment to the 1993 Grant of Easement with MassHighway. This 1999 amendment facilitated a partial release (removal) of soil from Governors Island for transfer to the Rubchinuk Landfill. The first amendment to the Grant of Easement allowed Massport to use a portion of the area for storage and disposal of Massport soils from the Logan 2000 projects. A second amendment in 1996 allowed the MassHighway to use stockpiled materials for construction of the I-90 Airport Interchange at Logan. The 1999 amendment releases MassHighway from all of its right, title and interest to obligations from this "released area," totaling approximately 24.8 acres.

The removal of soil from the Governors Island release area was initiated in June, 1999 at a rate of approximately 1,400 tons/day (1,000 cubic yards). In total, 380,000 tons (approximately 240,000 cubic yards) of the MassHighway soil was removed from Governors Island by November 2000. As a result, no MassHighway soil will need to be removed from Governors Island for runway construction.

5.8 Other Environmental Categories

The FAA's Airport Environmental Handbook (5050.4A) requires that a range of issues be addressed in terms of potential environmental consequences. Several of these potential impact categories are not applicable to the Airside Project. Specific impact categories that are not relevant to the proposed Airside Project improvements are discussed below.

5.8.1 Coastal Barriers

There are no coastal barrier resources as defined by the Coastal Barrier Resources Act (PL97-348) in the project area. As such the project will not affect these resources.

5.8.2 Wild and Scenic Rivers

Logan Airport is not adjacent to, nor will it affect any body of water included in the Wild and Scenic Rivers System Inventory. Accordingly, the project will have no impact on a river subject to the Wild and Scenic Rivers Act (PL 90-542).

5.8.3 Farmland

Logan Airport does not include any areas of farmland and therefore the project will not result in the conversion of any farmland to nonagricultural purposes. The project is consistent with the Farmland Protection Act (PL 97-98).

5.8.4 Energy Supply and Natural Resources

The addition of runway and taxiway elements will necessitate a slight increase in airfield energy use, primarily for construction and permanent airfield navigational lighting and signage. There is adequate energy to meet the energy needs of these temporary and long-term demands.

5.8.5 Light Emissions

As noted above, implementation of the taxiway and or runway improvements will require the installation and operation of new ground-mounted airfield navigational lighting and new airfield signage. All lighting and signage will be consistent with current equipment and operations. Proposed Runway 14/32 will not require the installation of a light pier.

5.8.6 Solid Waste

The Airside Project improvements will not generate the need for additional solid waste collection, control or disposal other than that associated with construction. Section 6.8.1 describes construction impacts of the Preferred Alternative.

6 Environmental Consequences

Key Points

This chapter repeats much of the analysis presented in the Airside Improvements Planning Project Draft Environmental Impact Statement/Environmental Impact Report (Airside Project Draft EIR/EIS). It is focused primarily on the comparison between the Preferred Alternative (Alternative 1A) and the No Action Alternative (Alternative 4) for representative fleets: the 29M Low Fleet and the 37.5M High Fleet scenarios. These fleets were chosen because they reflect the full range of potential impacts, including the worst case in terms of noise.[1]

Recent trends at Logan Airport indicate an increased presence of regional jet aircraft in the fleet mix. In order to examine the potential impacts that these 30-70 seat jet aircraft may have on the operational and environmental analysis of the proposed airside improvements, an additional long-term 37.5 million annual air passenger scenario was developed for this Supplemental Draft Environmental Impact Statement/Final Environmental Impact Report (Supplemental DEIS/FEIR). This fleet scenario, referred to as the 37.5M High Regional Jet (RJ) Fleet, reflects a significantly higher percentage of regional jet aircraft and a lower percentage of non-jet operations than any of the prior fleet forecasts presented in the Airside Project Draft EIS/EIR.

To further clarify the impacted areas, the analysis is presented through Geographic Information System (GIS) mapping with a more detailed base map and a different scale than was presented in Chapter 6 of the Airside Project Draft EIS/EIR.

Chapter 6 of this Supplemental DEIS/FEIS also includes an in-depth discussion of Environmental Justice requirements and additional Environmental Justice analyses requested by the Massachusetts Secretary of Environmental Affairs. In response to the Federal Aviation Administration's (FAA's) direction following the Supplemental Draft EIS Panel (SDEIS Panel) process, a school day/school year contour[2] is also included for the 29M Low Fleet scenario. Finally, the presentation of the flight tracks has been expanded to show the tracks over a wider geographic area.

1 Appendices E and F contain a summary of environmental impacts for other fleets analyzed in the Airside Project Draft EIS/EIR.
2 Contour provided in Appendix E of this Supplemental DEIS/FEIR.

Noise Benefits

- The Preferred Alternative reduces noise exposure in the most highly affected communities around Logan Airport: Winthrop, parts of East Boston, and Revere. Depending on the fleet forecast, all three communities have residents exposed to Day-Night Sound Level (DNL) values of 70 dB and above. Under the 29M Low Fleet scenario, use of Runway 14/32 will remove approximately 180 people in these communities from areas exposed to noise above 75 dB DNL, and some 60 people from areas of 70 dB DNL and above. Under the 37.5M High forecast, 199 people in areas of above 75 dB DNL and 2,800 people in areas of 70 dB DNL and above will no longer be exposed to those high noise levels. These numbers represent 77 percent and 73 percent reductions, respectively, in the total population residing in the 70 dB DNL and above and the 75 dB and above noise contours.

- The reduction in exposure at the highest DNL values is achieved by redistributing aircraft onto other runways and increasing the number of over-water operations. This redistribution causes increases in exposure at lower DNL values. Under the 29M Low Fleet scenario, the Preferred Alternative is estimated to increase the number of people exposed to noise above 65 dB DNL by 378, 2 percent of the total population in that contour compared to the No Action Alternative. Under the 37.5M High Fleet scenario, the Preferred Alternative increases the number of people above 65 dB DNL by 508, a 4 percent increase.

- Under the 29 M Low Fleet scenario, no one residing in an area exposed to noise above 65 dB DNL is projected to experience a noise level increase greater than 1.5 dB due to the Preferred Alternative. Approximately 400 people in Winthrop will experience decreases in noise of more than 1.5 dB compared to the No Action Alternative.

- In addition to reducing noise exposure at the highest DNL levels, the Preferred Alternative allows for more flights over water rather than over populated areas, as well as a more balanced geographic distribution of jet operations. Under the 37.5M High Fleet scenario, the Preferred Alternative results in 41 percent of jets utilizing runways affecting communities north and south of the airport, compared to 91 percent for the No Action Alternative. The percentage of jets flying over the water increases significantly, from 6 percent in the No Action Alternative to 30 percent with the Preferred Alternative.

- The Preferred Alternative, with its unidirectional Runway 14/32 and Centerfield Taxiway, reduces delay and consequently the number of nighttime (10 PM to 7 AM) operations by approximately 5 percent compared to the No Action Alternative under the 29M Low Fleet scenario.

- The Preferred Alternative is even more effective at reducing delays under the 37.5M High Fleet forecast. As a result, in that scenario the number of nighttime operations is reduced by approximately 20 percent compared to the No Action Alternative.

- Under the 37.5M High RJ Fleet scenario, the Preferred Alternative also reduces noise in the most-highly exposed communities. Proposed Runway 14/32 removes an estimated 164 people from exposure to noise above a DNL of 75 dB, a reduction of 74 percent compared to the No Action Alternative. It also removes approximately 1,433 people from exposure to DNL levels above 70 dB.

- Under the 37.5M High RJ Fleet scenario, the reduction in the highest exposure levels achieved with the Preferred Alternative causes increases in exposure for 364 people at DNL values above 65 dB. This is a 3 percent increase compared to the No Action Alternative.
- Under the 37.5M High RJ Fleet scenario, the Preferred Alternative reduces the number of nighttime operations by 13 percent compared to the No Action Alternative.
- The Preferred Alternative generally reduces the noise from ground movements, lowering DNL levels due to taxi operations by a few tenths to as much as 3 dB at seven close-in monitoring locations.

Land Use and Social Impacts

- The Preferred Alternative will have no significant impacts on land uses adjacent to or in the immediate vicinity of Logan Airport. The only relocation required for construction of Runway 14/32 involves the tenants of Building 60 in the South Cargo Area. Massport will provide relocation assistance as required under applicable law to mitigate impacts to affected tenants.

Historic Resources

- Providing sound insulation for the few historic residential properties within the 65 dB DNL contour associated with the Preferred Alternative will be undertaken in accordance with historic building rehabilitation standards established by the Secretary of the Interior (36 CFR 800.5(b)).
- The FAA and the Massachusetts Historical Commission have concurred that the proposed project will have no adverse effect on significant historic properties (see Appendix H for a copy of the letter from the Massachusetts Historical Commission, December 21, 1999.)

Other Section 4(f) Resources

- The FAA found that implementation of the Preferred Alternative will neither incorporate land from a Section 4(f) resource, nor affect the normal activity or aesthetic value of a public park, recreation area or wildlife refuge.
- The Preferred Alternative does not add any new parklands within the 65 dB DNL contour. The Boston Harbor Islands are already within the No Action 65 dB DNL contour, while the Arnold Arboretum, Emerald Necklace and Franklin Park are well outside the 65 dB DNL contour and will not experience new noise impacts.

Air Quality Benefits

- Implementation of any of the Airside Project alternatives produces a reduction in emissions and an improvement in ambient air quality when compared to the No Action Alternative, due to improved airfield efficiency and shorter aircraft delay periods.

- None of the Alternatives will result in any violations of federal or state air quality standards.
- Due to improved airfield efficiency and shorter delay periods, the Preferred Alternative results in a reduction of air pollutant emissions when compared to the No Action Alternative.
- The Airside Improvements Planning Project does not require a Federal General Conformity determination for the purposes of air quality, because it will not exceed general conformity thresholds – therefore it is assumed to conform to the State Implementation Plan.

Biotic Communities

- By constructing the Centerfield Taxiway and the Taxiway Delta extension, approximately 37 acres of existing grassland will be converted to pavement, resulting in the loss of an area of Upland Sandpiper habitat. An on-site and off-site mitigation plan has been developed in consultation with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) to mitigate impacts to the upland sandpiper consistent with aircraft safety.
- There are no significant impacts to terrestrial vegetation, wetlands or typical wildlife.

Water Quality

- Construction of Runway 14/32 and the Taxiway components (the Preferred Alternative) will create additional impervious surfaces at Logan Airport and will increase the peak rate of runoff from Logan Airport to Boston Harbor by approximately 3.8 percent. The combination of overland flow across grass areas and the large number of discharge locations helps to attenuate and disperse contaminants in the runoff, and therefore the general quality of runoff under the Preferred Alternative is expected to be similar to present runoff.
- Since the existing water quality in Boston Harbor will not be affected by the construction of the runway or taxiway improvements, there are no adverse water quality impacts that would result from the Preferred Alternative.

Soil Removal

- All soils removed from the site will be managed in accordance with State regulations and Massport policy to minimize impacts. Appropriate sediment and erosion controls will be employed during construction and disturbed soils will be revegetated.
- The Airside Project Draft EIS/EIR identified a potential need to remove soil materials stockpiled on Governors Island for construction of Runway 14/32. In response to a request from the Court-appointed receiver for the Rubchinuk Landfill, Massport arranged for the transport of the Massachusetts Highway Department (MassHighway) soils from Governors Island to the Rubchinuk Landfill in Middleton. This work has since occurred as part of a separate initiative. The transportation of the MassHighway soils began in June 1999 and was completed in November 2000, therefore none of these soils will need to be moved offsite for construction of Runway 14/32.

Environmental Justice

- There is no disproportionate high and adverse impact on minority and low-income populations caused by the Preferred Alternative. Adverse noise impacts of the Preferred Alternative are not predominately borne by a minority or low-income population. Only 21 percent of the population within the resulting 65 dB DNL is minority, compared to the Suffolk County population which is 38 percent minority. Less than 2 percent of the population within the 65 dB DNL contour has a household income of less than 150 percent of poverty level.
- The additional area within the 65 dB DNL contour associated with the Preferred Alternative includes a predominantly Hispanic neighborhood in Chelsea which is predicted to experience an increase of 0.6 dB or less under the near-term 29M Low Fleet, the worst case scenario based on total noise exposure. Under FAA standards, this change is not a significant adverse impact. Mitigation of the increased noise will be provided to the affected community in the form of residential sound insulation.

Construction

- Construction of the runway and taxiway improvement components of the Preferred Alternative will occur on the existing airfield. Construction will be managed to minimize noise, air and water pollution, and other impacts to the adjacent community.
- The total period for the phased construction of the runway and taxiway improvement components of the Preferred Alternative is approximately five years. Construction vehicles would access the airport on designated haul routes via the Ted Williams Tunnel or Route 1A, and thus would not impact local residential streets adjacent to Logan Airport .
- Construction traffic associated with the Preferred Alternative will be reduced significantly from the number of truck trips presented in the Airside Project Draft EIS/EIR as a result of the reduction of soil material to be moved off-site.

Irretrievable Commitment of Resources

- The Preferred Alternative causes no irretrievable commitment of natural resources. Construction of the runway and taxiway improvement components of the Preferred Alternative will consume fuel and result in the consumption of raw materials such as gravel, concrete and other materials required for the construction process.
- Measures will be implemented to mitigate both short- and long–term impacts on natural resources to the greatest extent practicable.

6.1 Introduction

This chapter of the Supplemental DEIS/FEIR focuses on the benefits and impacts of two Airside Project Improvements Alternatives – the No Action Alternative and the Preferred Alternative which includes all improvements except Peak Period Pricing. It includes a discussion of long-term impacts relating to airfield operations, as well as a description of shorter-term construction impacts.

The environmental consequences of the proposed Airside Project improvements were evaluated against a near-term demand level of 29 million annual passengers and long-term levels of 37.5 and 45 million passengers (referred to in this document as 29M, 37.5M, and 45M). These demand levels are expected in the years 2003, 2015, and 2024, respectively. At each passenger level, two different operations forecasts were developed. The High and Low Fleet scenarios, presented in the Airside Project Draft EIS/EIR, reflect differing aircraft fleet mix assumptions. The Low Fleets assume more large jet operations than non-jet operations, similar to current conditions. The High Fleets assume a greater proportion of non-jet aircraft and thus a higher level of total operations for the same passenger level.

Recent trends at Logan Airport indicate an increased presence of regional jet aircraft. In order to examine the potential impacts that these 30-70 seat jet aircraft may have on the operational and environmental analysis of the proposed airside improvements, an additional long-term 37.5 million passenger scenario was developed for this Supplemental DEIS/FEIR. This fleet scenario, referred to as the 37.5M High Regional Jet (RJ) Fleet, reflects a much higher percentage of regional jet aircraft and a lower percentage of non-jet operations than do any of the prior fleet forecasts presented in the Airside Project Draft EIS/EIR.

The Supplemental DEIS/FEIR includes updated operational and environmental analyses of 1998 conditions similar to that contained in the 1998 Annual Update prepared in October 1999. While the 1999 Environmental Status and Planning Report (ESPR, formerly the GEIR) published in December 2000 includes updated analyses for 1999, the differences between the two study years are small. Between 1998 and 1999, operations declined by 2.5 percent, primarily due to a reduction in regional carrier operations. Since the fleet mix and runway use varied little, the noise contours and population impacts were also similar, with slightly less impact in Winthrop and Boston and slightly more in Chelsea and Revere in 1999 compared to 1998. The air quality and other environmental analyses also yielded similar results. Since the relevant comparison for evaluating the proposed airside improvements is the comparison between the No Action and Preferred Alternatives, and since 1998 and 1999 are similar in terms of passengers, operations, and environmental impacts, this Supplemental DEIS/FEIR maintains the 1998 modeling analysis as a representation of recent conditions at Logan Airport.

The Supplemental DEIS/FEIR focuses on the 29M Low and 37.5 High Fleet scenarios, because these represent the full range of environmental impacts, as well as the newly added 37.5 M High Regional Jet fleet scenario. Appendices E and F contain a summary of environmental impacts for other fleets analyzed in the Airside Project Draft EIS/EIR.

Specific studies and analyses conducted to assess the environmental consequences in this Supplemental DEIS/FEIR include:

- Review of potential benefits and impacts of each Alternative, but with a focused comparison of the Preferred Alternative (all actions except Peak Period Pricing) to the No Action Alternative for the 29 M Low and 37.5M High Fleet scenarios.
- Environmental analyses associated with an additional future fleet scenario – the 37.5M High RJ Fleet scenario.
- Inclusion of GIS mapping with a more detailed base map for noise contours showing land use at a larger scale.
- Tabular and graphic comparison of the Preferred Alternative and No Action Alternative showing the number and location of people who are exposed to noise.
- Discussion of the relationship between the noise analyses conducted for the Airside Project and the Runway 27 EIS.
- Focused noise contour analysis comparing the *1998 Annual Update*, Runway 27 EIS, and the Airside Project noise contours.
- Reevaluation of construction impacts (truck trips and air quality) associated with construction of Runway 14/32 due to the reduced amount of soil materials that will need to be removed from Governors Island.
- Expanded discussion of environmental justice and related mitigation.
- A school day/school year contour for the 29M Low Fleet scenario which results in the largest noise-exposed area (See Appendix E).

6.2 Noise

This section presents the results of the noise modeling analysis of the Airside Project Alternatives, focusing on the Preferred Alternative and comparing its noise impact with the No Action Alternative under two different aircraft fleet assumptions.

The smaller fleet assumes a demand level of 29 million passengers and a lower percentage of non-jet operations (29M Low Fleet scenario). It is forecast to occur in the year 2003. The second fleet scenario assumes a demand level of 37.5 million passengers and a higher percentage of non-jet operations (37.5M High Fleet scenario). This is the long-term outlook, and is forecast to occur around 2015. As described in Chapter 4, a third fleet, the 37.5M High Fleet Regional Jet scenario (37.5MHigh RJ Fleet) has been added in this Supplemental DEIS/FEIR. It reflects replacement of many non-jet commuter operations by small 30-70 seat regional jets, such as the Canadair Regional Jet and the Embraer 145. These fleets were described in detail in Chapter 4, and together they bracket a range of potential exposure levels. Noise impacts of other fleets were analyzed in Section 6.2 of the

Airside Project Draft EIS/EIR. Summary noise results for the other fleets are contained in Appendix E of this Supplemental DEIS/FEIR.

This section also addresses the exposure levels associated with the Preferred Alternative and the No Action Alternative in the context of the noise that occurred in 1998 due to actual operations that year. It discusses DNL noise contours and other metrics common to all three scenarios, and presents population counts under each Alternative as determined by the Integrated Noise Model (INM). To address noise exposure caused by aircraft taxiing between runway and apron areas, this section also summarizes findings from the Airside Project Draft EIS/EIR pertaining to noise from taxiway and other ground operations. See Section 5.2 of the Airside Project Draft EIS/EIR for a description of the noise models used in these analyses and Section 6.2 of the Airside Project Draft EIS/EIR for additional information on the effects of ground noise under action alternatives other than the Preferred Alternative.

Finally, the noise section concludes with an evaluation of all Airside Project alternatives using the new 37.5M High RJ Fleet scenario described in Chapter 4.

6.2.1 INM Inputs for the Evaluation of Flight Noise

6.2.1.1 Fleet Mix and Operations

Operation summaries for 1998 and for the No Action and Preferred Alternatives under each of the future fleet forecasts are presented in Table 6.2-1. Summaries based on the 1993 Historic Modeled condition were presented in the Airside Project Draft EIS/EIR. Modeled activity includes both scheduled and unscheduled operations by major air carriers, commuter airlines, and air cargo operators, as well as general aviation jet and turboprop aircraft.

The Preferred Alternative has no effect on the total number of flights in and out of Logan Airport -- air carriers and cargo operators will schedule their aircraft to meet the public's travel and shipping needs. However, there *are* important noise implications between the No Action and Preferred Alternatives in the manner that these flights are accommodated. Some runway and taxiway configurations have lower capacities than others, and when those combinations have to be used because of poor weather or other circumstances, aircraft delays grow rapidly. The effect of aircraft delays on noise exposure is twofold:

- As delays increase, daytime and evening flights slip into nighttime hours, causing greater noise disturbance and an increase in thosenoise measures (DNL, LeqN, and TAN, in particular) that are sensitive to late night activity; and
- Use of low capacity runway configurations makes achieving the Preferential Runway Advisory System (PRAS) goals more difficult for air traffic controllers.

The Preferred Alternative, which includes unidirectional Runway 14/32 and the Centerfield Taxiway, is estimated to reduce the number of nighttime operations from approximately 132 to 125, a decrease of 7 operations per night or 5 percent of the projected nighttime operations that would otherwise occur under the No Action Alternative for the 29M Low Fleet scenario.

Table 6.2-1
Average Daily Operations for 1998 and for Future 29M Low and 37.5M High Fleet Scenarios for the No Action Alternative and the Preferred Alternative

	Stage 2 Jets	Stage 3 Jets	Turboprops	Totals		
Fleet Forecast	Day/Night	Day/Night	Day/Night	Day	Night	Daily
1998 Actual	90/6	572/100	590/38	1,252	144	1,396
29M Low Fleet						
No Action (Alt. 4)	16/6	699/114	550/13	1,265	132	1,397
Preferred (Alt.1A)	16/5	703/108	553/12	1,272	125	1,397
37.5M High Fleet						
No Action (Alt. 4)	0/0	819/209	615/22	1,434	231	1,665
Preferred (Alt.1A)	0/0	843/166	635/18	1,478	184	1,662

Note: "Day" is defined as 7:00 AM to 10:00 PM and "Night" is defined as 10:00 PM to 7:00 AM, consistent with the definitions as used in DNL calculations.

For the long-term 37.5M High Fleet scenario, the difference is even more significant. The Preferred Alternative reduces the number of nighttime jet operations by an estimated 43 per night and the number of nighttime turboprops by another four, for a total reduction in nighttime flights of 47, or about 20 percent compared to the No Action Alternative, all as a result of fewer delays.

The significant reduction in nighttime operations under the Preferred Alternative is enhanced by the fact that overall noise exposure is expected to decrease further in the near future. Both the 1998 fleet as well as the 29M Low Fleet scenario include several noisy Stage 2 jets with maximum takeoff weights greater than 75,000 pounds. However, beginning January 1, 2000, every aircraft at Logan greater than 75,000 pounds met FAR Part 36 Stage 3 noise limits. Furthermore, many of the Stage 2 jets that have been hushkitted to meet Stage 3 requirements are expected to be retired over the next ten years and replaced with newer and quieter Stage 3 aircraft. The number of Stage 2 aircraft in the 29M Low Fleet scenario is insignificant.

Some operators at Logan Airport have already announced and implemented plans for fleet renewals. As indicated in the *1998 Annual Update,* the US Airways and Delta Shuttles planned to replace 78 daily operations flown in hushkitted Boeing 727-200s. These aircraft meet Massport's as well as the FAA's noise regulations, but Massport lobbied the carriers to update their fleets to newer and quieter aircraft. Since those discussions, the Delta Shuttle replaced its 727 aircraft with new, quieter 737-800 aircraft, and US Airways took delivery of new Airbus 320s to replace its older 727s. These fleet improvements and the reductions in night operations with the Preferred Alternative will each contribute to meaningful reductions in noise exposure.

6.2.1.2 Flight Tracks

Flight tracks were developed for Runway 14/32 with input from the FAA in order to evaluate noise impacts for both Alternative 1 and the Preferred Alternative. These tracks are shown in Figures 6.2-1 through 6.2-4. They indicate that all arrivals to unidirectional Runway 14/32 come from the harbor over water and that all departures climb out in the opposite direction over the water. While aircraft that use Runway 14/32 do fly over land, they are considered over-water flight paths because they cross land further from the runway and at higher altitudes than operations to or from other Logan Airport runways.

In Figure 6.2-1, jet arrivals to Runway 32 coming into the area from the north and west approach Logan Airport on a downwind leg well east of the airport together in the same flow of traffic with other jet arrivals to Runway 33L, then make a right turn crossing over to a final approach that is over the harbor and parallel to the approach for Runway 33L. Propeller aircraft from the north and west (see Figure 6.2-2) are separated from the flow of jet traffic well northwest of Logan Airport and fly south over the Airport making a left turn to join the final approach to Runway 32. Both types of aircraft coming into the area from southerly directions approach the airport and make a left turn (as is done now) to line up on their final approaches over the harbor.

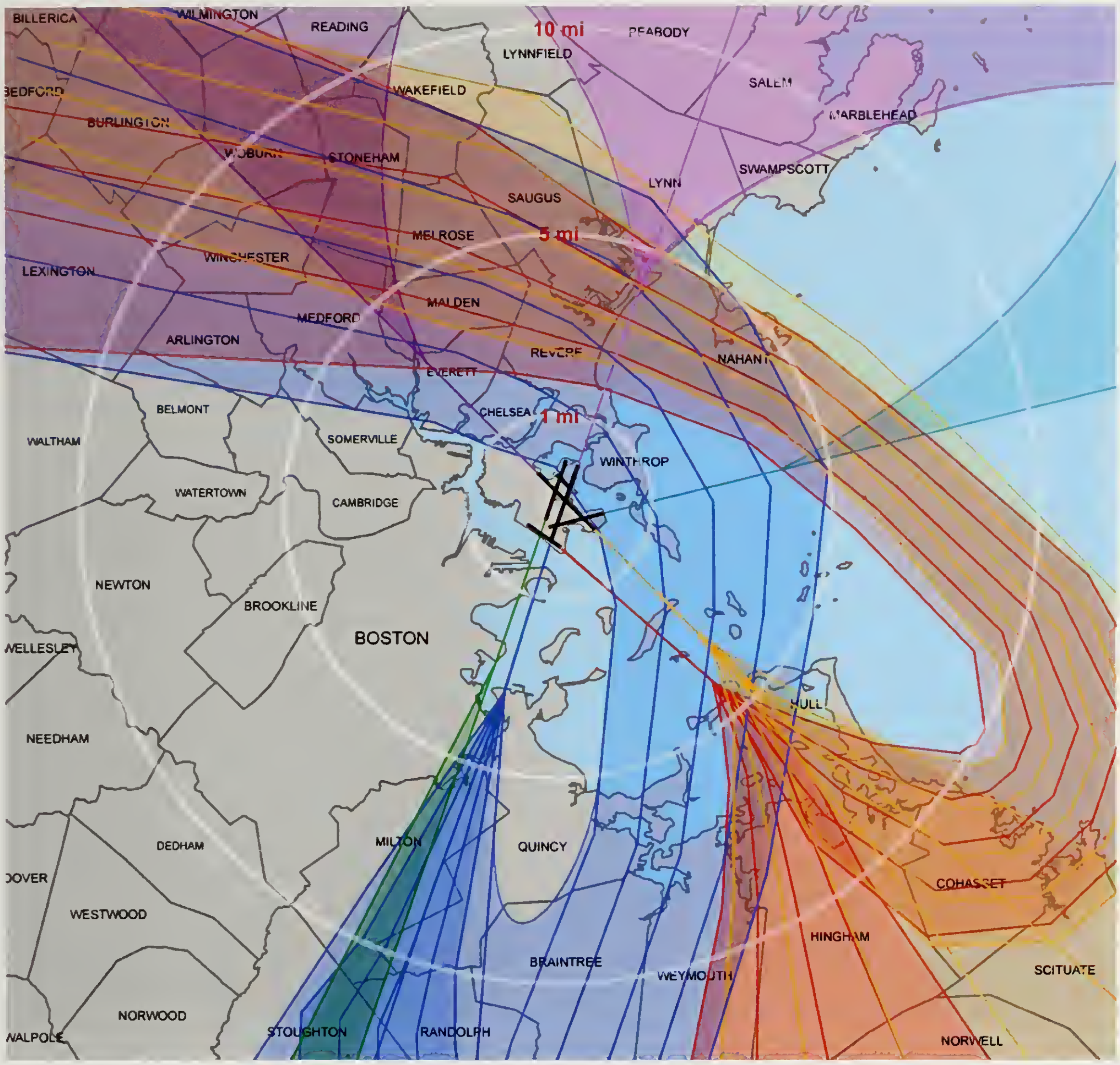
The closest populated land area overflown by arrivals to Runway 32 is tip of the Hull peninsula, approximately 5 miles from the runway end. In contrast, arrivals to Runways 4L/R and 22L/R fly over populated land areas until they are within one mile of the runway ends. In the case of departing aircraft, Figures 6.2-3 and 6.2-4 show jet aircraft turning to a heading that takes them out of the harbor over water, similar to the current jet departure procedure for Runway 15R. Most of these jet aircraft do not cross back over land until they are at or above 6,000 feet .The propeller aircraft climb initially over the water and then are vectored within the indicated zone by ATC towards their enroute headings.

For the lowest-altitude portions of flights to and from the proposed runway, aircraft are flying over water. In addition, the flight tracks for the runway demonstrate that aircraft using Runway 14/32 will fly over cities or towns that are currently overflown by aircraft utilizing Logan Airport 's existing runways.

6.2.1.3 Runway Use

Summaries of effective runway use projections for the Preferred and No Action Alternatives under both the 29M Low Fleet and the 37.5M High Fleet scenarios are shown in Tables 6.2-2 and 6.2-3 below. [3](See Appendix H of the Airside Project Draft EIS/EIR for jet runway usage for the 29M High Fleet, 37.5M Low Fleet, and 45M High Fleet scenarios.) Effective jet utilizations for 1998 operations appeared in Table 5-12 of the *1998 Annual Update* and are reproduced here in Table 6.2-4 for reference along with the corresponding PRAS goals discussed in Chapter 4.

3 Effective operations include jet operations, only with nighttime operations weighted by a factor of 10. Thus one nighttime operation is equivalent to 10 daytime jet operations.



Aircraft Altitude Along the Flight Path (from runway touchdown)

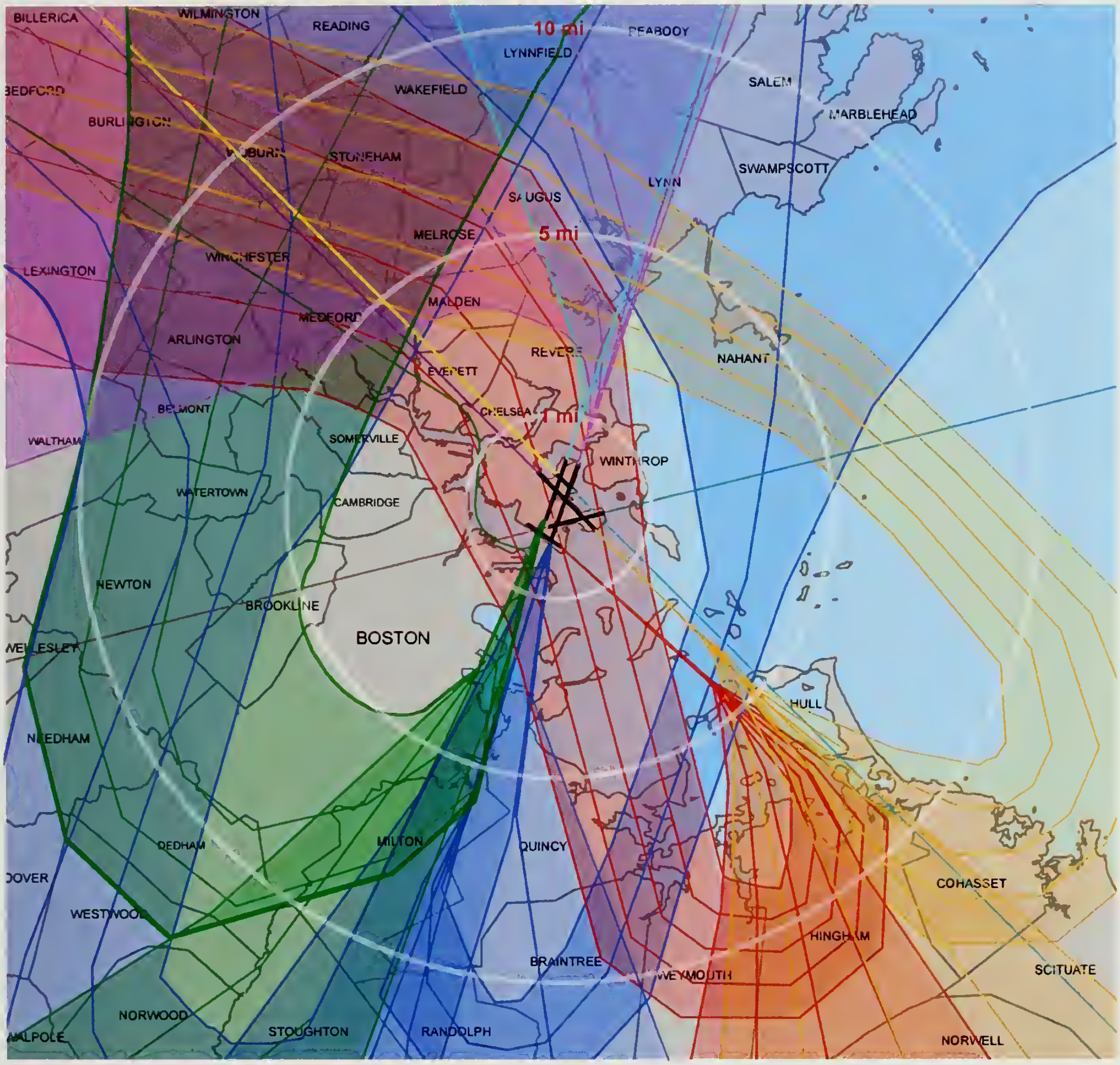
1 Mile from Touchdown = 500 ft. or Less 5 Miles from Touchdown = 2,000 ft. or Less 10 Miles from Touchdown = 3,000 ft. or Less

Notes: Mileage rings are for reference only and do not indicate actual distance along the flight path
All jet arrivals descend from 11,000 ft. to 6,000 ft. entering final approaching airspace

massport

Figure 6.2-1

Flight Tracks for Arriving Jet Aircraft on All Runways



Aircraft Altitude Along the Flight Path (from runway touchdown)

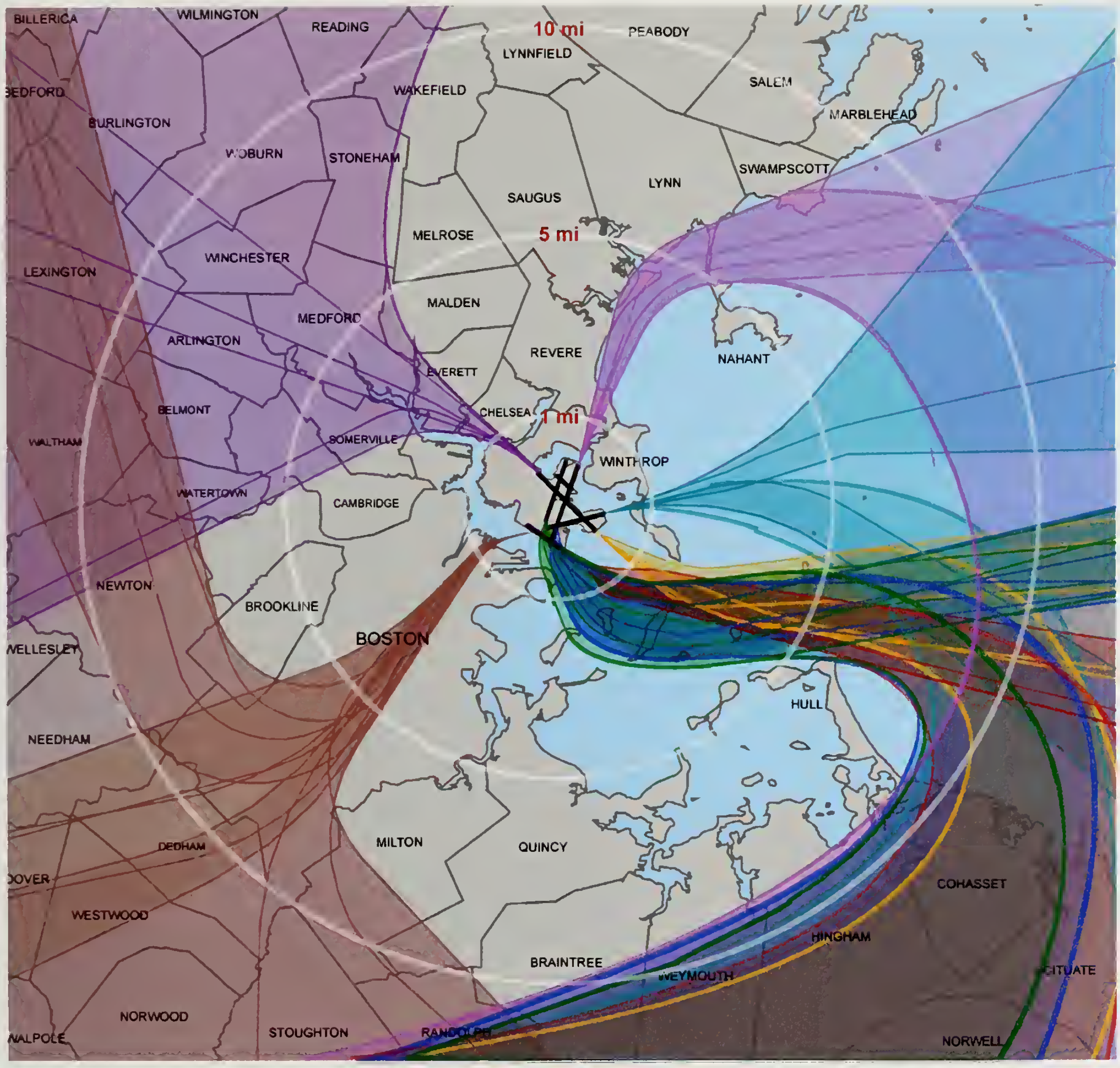
1 Mile from Touchdown = 500 ft. or Less   5 Miles from Touchdown = 2,000 ft. or Less   10 Miles from Touchdown = 3,000 ft. or Less

Notes: Mileage rings are for reference only and do not indicate actual distance along the flight path

massport

Figure 6.2-2

Flight Tracks for Arriving Turboprop Aircraft on All Runways



Aircraft Altitude Along the Flight Path (from runway departure)

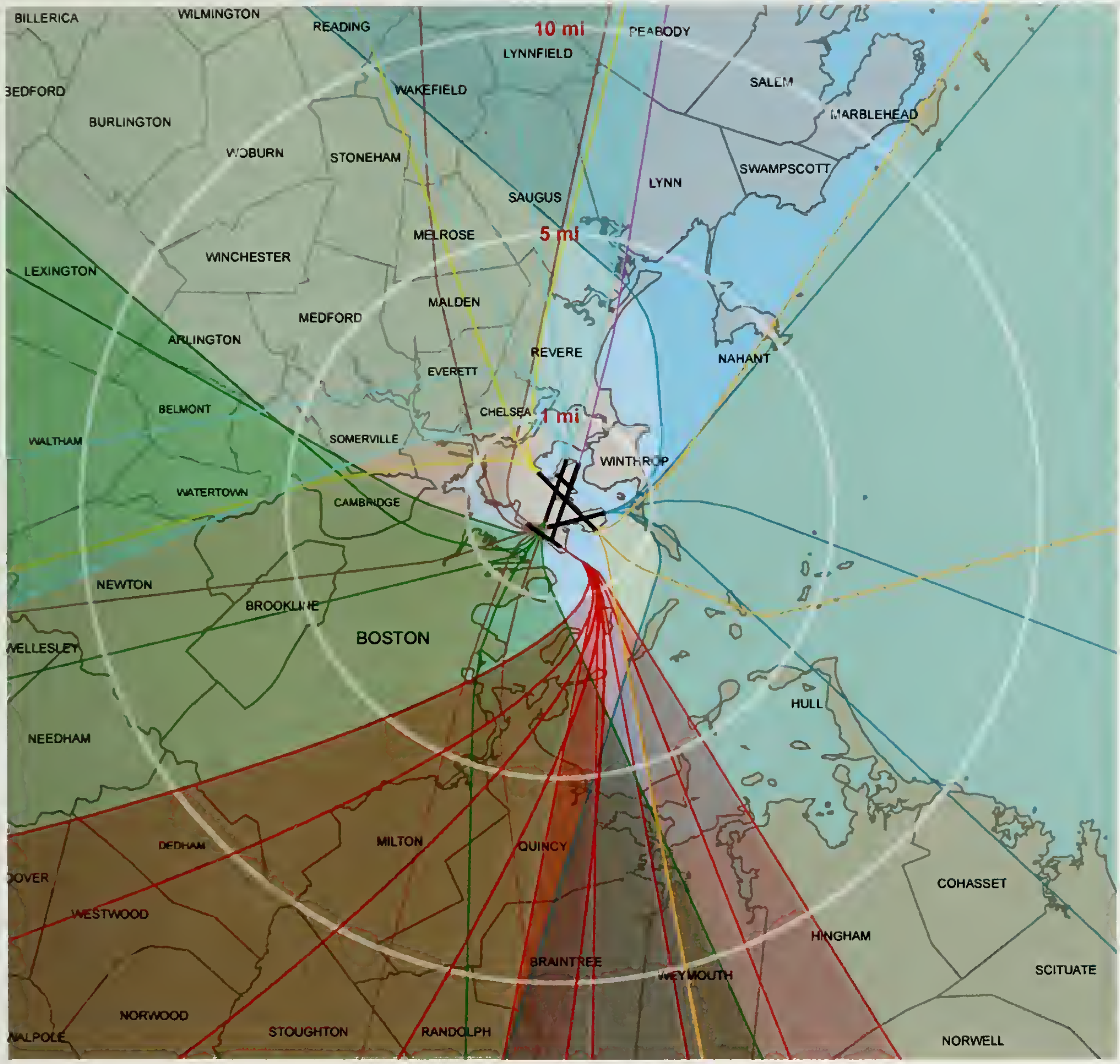
1 Mile from Takeoff= 1,000 ft. or Less 5 Miles from Takeoff = 2,000 ft. or More 10 Miles from Takeoff = 4,000 ft. or More

Notes. Mileage rings are for reference only and do not indicate actual distance along the flight path
Jet departures cross the shoreline of the Southshore at or above 6,000 ft.

massport

Figure 6.2-3

Flight Tracks for Departing Jet Aircraft on All Runways



Aircraft Altitude Along the Flight Path (from runway departure)

1 Mile from Takeoff= 1,000 ft. or Less   5 Miles from Takeoff = 2,000 ft. or More   10 Miles from Takeoff = 4,000 ft. or More

Note Mileage rings are for reference only and do not indicate actual distance along the flight path

Figure 6.2-4

Flight Tracks for Departing Turboprop Aircraft on All Runways

Table 6.2-2
Effective Arrivals by Fleet and Runway End

	Percent Effective Arrivals by Fleet		
Runway End and Improvement Concept	1993 Historic	29M Low	37.5M High
Runway 4L/R			
PRAS Goal	**21.1**	**21.1**	**21.1**
Alternative 1 - All Actions	--	24.6	30.0
Preferred Alternative - All Except Peak Period Pricing	--	24.6	29.7
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	34.1	45.4
Alternative 4 - No Action	35.8	34.8	47.3
Runway 15L/R			
PRAS GOAL	**8.4**	**8.4**	**8.4**
Alternative 1 - All Actions	--	7.7	6.0
Preferred Alternative - All Except Peak Period Pricing	--	7.7	4.1
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	4.1	2.1
Alternative 4 - No Action	3.7	4.9	1.2
Runway 22L/R			
PRAS Goal	**6.5**	**6.5**	**6.5**
Alternative 1 - All Actions	--	12.2	12.0
Preferred Alternative - All Except Peak Period Pricing	--	12.3	16.1
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	12.1	13.9
Alternative 4 - No Action	11.7	12.4	21.6
Runway 27			
PRAS Goal	**21.7**	**21.7**	**21.7**
Alternative 1 - All Actions	--	18.6	16.0
Preferred Alternative - All Except Peak Period Pricing	--	18.6	13.1
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	14.6	23.7
Alternative 4 - No Action	16.9	14.6	15.7
Runways 33L and 32			
PRAS Goal	**42.3**	**42.3**	**42.3**
Alternative 1 – All Actions	--	36.8	35.9
Preferred Alternative - All Except Peak Period Pricing	--	36.8	37.0
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	35.0	14.9
Alternative 4 – No Action	31.8	33.2	14.2

Table 6.2-3
Effective Departures By Fleet and Runway End

Runway End and Improvement Concept	Percent Effective Departures by Fleet		
	1993 Historic	29M Low	37.5M High
Runway 4L/R			
PRAS Goal	**5.6**	**5.6**	**5.6**
Alternative 1 - All Actions	--	7.6	11.1
Preferred Alternative - All Except Peak Period Pricing	--	7.8	6.7
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	7.0	13.9
Alternative 4 - No Action	10.3	7.7	7.7
Runway 15L/R and 14			
PRAS Goal	**23.3**	**23.3**	**23.3**
Alternative 1 - All Actions	--	18.1	11.6
Preferred Alternative - All Except Peak Period Pricing	--	18.0	14.6
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	13.0	9.5
Alternative 4 - No Action	12.9	12.5	12.2
Runway 22L/R			
PRAS Goal	**28.0**	**28.0**	**28.0**
Alternative 1 - All Actions	--	26.9	24.8
Preferred Alternative - All Except Peak Period Pricing	--	27.0	25.1
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	26.1	37.3
Alternative 4 - No Action	27.5	26.3	33.4
Runway 27			
PRAS Goal	**17.9**	**17.9**	**17.9**
Alternative 1 - All Actions	--	17.0	17.1
Preferred Alternative - All Except Peak Period Pricing	--	16.9	20.5
Alternative 2/3 - All Except Runway 14/32 and No Build	--	15.2	5.4
Alternative 4 - No Action	12.3	14.1	5.5
Runway 33L			
PRAS Goal	**11.9**	**11.9**	**11.9**
Alternative 1 - All Actions	--	12.0	9.8
Preferred Alternative - All Except Peak Period Pricing	--	12.0	9.9
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	11.5	1.7
Alternative 4 - No Action	11.7	11.1	3.0
Runway 9			
PRAS Goal	**13.3**	**13.3**	**13.3**
Alternative 1 - All Actions	--	18.5	25.7
Preferred Alternative - All Except Peak Period Pricing	--	18.4	23.1
Alternatives 2/3 - All Except Runway 14/32 and No Build	--	27.3	32.3
Alternative 4 - No Action	25.2	28.3	38.2

Table 6.2-4
1998 Effective Jet Runway Utilization

	1998 Effective		PRAS Goals	
Runway End	**Arrivals**	**Departures**	**Arrivals**	**Departures**
4L/R	36.7%	6.6%	21.1%	5.6%
9	0.0%	29.9%	0.0%	13.3%
15R	1.2%	10.9%	8.4%	23.3%
22L/R	11.9%	30.9%	6.5%	28.0%
27	21.7%	16.6%	21.7%	17.9%
33L	28.6%	5.2%	42.3%	11.9%
Totals	100.1%	100.1%	100.0%	100.0%

Because of random variations in wind and weather conditions, as well as fluctuations in demand, it is unlikely that the annual PRAS goals will ever be achieved exactly. However, comparing 1998 conditions with the stated goals, there are several areas where improved compliance would help reduce noise in the most highly exposed neighborhoods. Use of Runway 9 for departures is currently more than double the desired utilization and directly contributes to high exposure levels in Winthrop. Also, lower-than-desired use of Runway 15R for departures and 33L for arrivals means that more noise is occurring over populated areas rather than over water to the southeast of Logan Airport.

Over use of Runways 4L and 4R for arrivals creates higher noise exposure in the vicinity of City Point in South Boston and other South Shore communities. In addition, excessive use of Runway 22L for arrivals and 4R for departures creates more noise for areas of Winthrop and Bayswater Street in East Boston. Each of these situations is exacerbated further under the 37.5M High Fleet scenario.

Only portions of East Boston and Chelsea have benefited from this current use; Runway 33L is used for departures less than half as much as its PRAS goal, and Runway 15R is used for arrivals only one-seventh as much as its PRAS utilization goal.

Under the 29M Low Fleet scenario, the Preferred Alternative, which includes Runway 14/32, offers a dramatic improvement in Air Traffic Control's (ATC's) ability to achieve the PRAS goals compared to the No Action Alternative. For example, under the 29M Low Fleet scenario effective use of Runway 9 for departures over Winthrop decreases from 30 percent in 1998 and 28 percent in the future No Action Alternative down to approximately 18 percent with the Preferred Alternative; the PRAS goal for Runway 9 is 13 percent. Similarly, to the south, effective utilization of Runways 4L and 4R for landings over City Point decreases from 37 percent in 1998 and 35 percent in the future No Action Alternative to 25 percent with the Preferred Alternative. The PRAS goal for those runways is 21 percent.

The Preferred Alternative also increases the use of overwater flight paths. Under the 29M Low Fleet scenario, departures on Runway 15R increase from 13 percent with the No Action Alternative up to 18 percent (Runways 15R and 14) with the Preferred Alternative, consistent with the PRAS objective to maximize over-water routings. In the opposite

direction, arrivals to Runway 33L increase from 33 percent with the No Action Alternative up to 37 percent with the Preferred Alternative (Runways 33L and 32).

Collectively, these changes clearly show that the added flexibility of the new Runway 14/32 plays a significant role in ATC's ability to better achieve the current PRAS goals, especially those that involve over-water operations. The resulting noise benefits are discussed in the following section.

6.2.2 INM Modeled In-flight Noise Levels

As the discussion in the prior sections indicates, with a growing number of operations at Logan represented by the 29M Low Fleet scenario and 37.5M High Fleet scenario, the No Action Alternative will cause Runways 4L/R and 27to be utilized for increasing numbers of arrivals and Runways 22L/R and 9 for increasing numbers of departures. These increases will occur despite the fact that even present runway usages exceed the PRAS goals. Without the addition of Runway 14/32, these runway combinations are the only ones that can accommodate the increasing demand. Noise exposure off these runway ends will increase, as well.

Unidirectional Runway 14/32, on the other hand, will give air traffic controllers two or three runways to use during northwest winds (instead of the current one or two), and will offer greater flexibility to achieve both long-term annual PRAS goals and short-term dwell and persistence relief. This benefits the neighborhoods experiencing the most aircraft noise, accomplishing exactly what PRAS was designed to do.

The next sections document the noise contour results of the INM modeling for the No Action and Preferred Alternatives.

6.2. 3 Area-wide Cumulative Noise Exposure Contours

Appendix L of the Airside Project Draft EIS/EIR presented a complete set of DNL contours covering the full range of project Alternatives and fleet forecasts addressed in this study. A summary of the noise results for fleets analyzed in the Airside Project Draft EIS/EIR is in Appendix E of this Supplemental DEIS/FEIR. The 65 dB DNL contours for the No Action and Preferred Alternatives under the 29M Low and 37.5M High Fleets are presented in Figures 6.2-5 and 6.2-6 to show the relative effects of each of the study cases on an improved base map. Figures 6.2-7 and 6.2-8 compare DNL contour values of 60, 65, and 70 dB under each of the two fleet assumptions. Their differences are discussed in the following section.

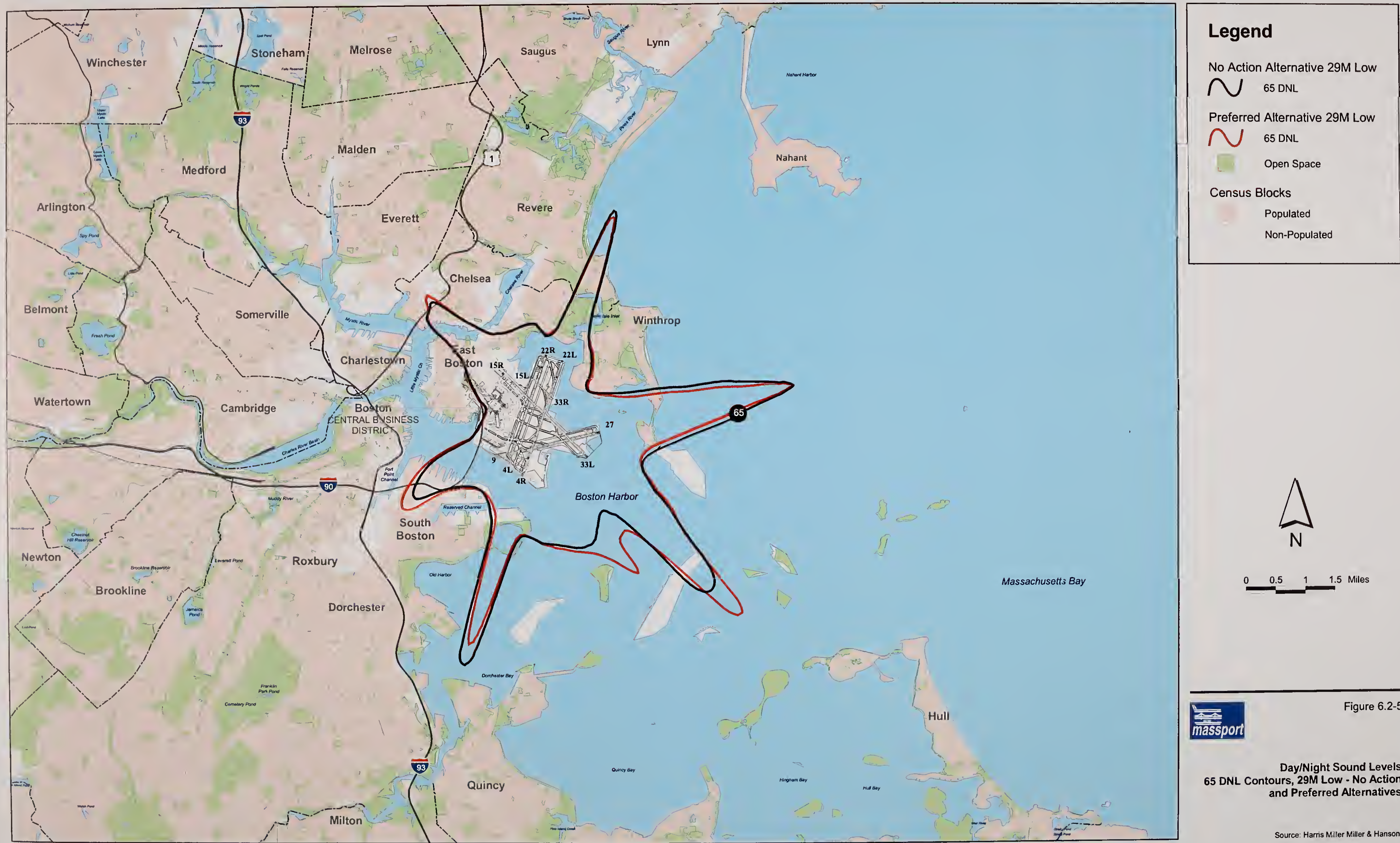
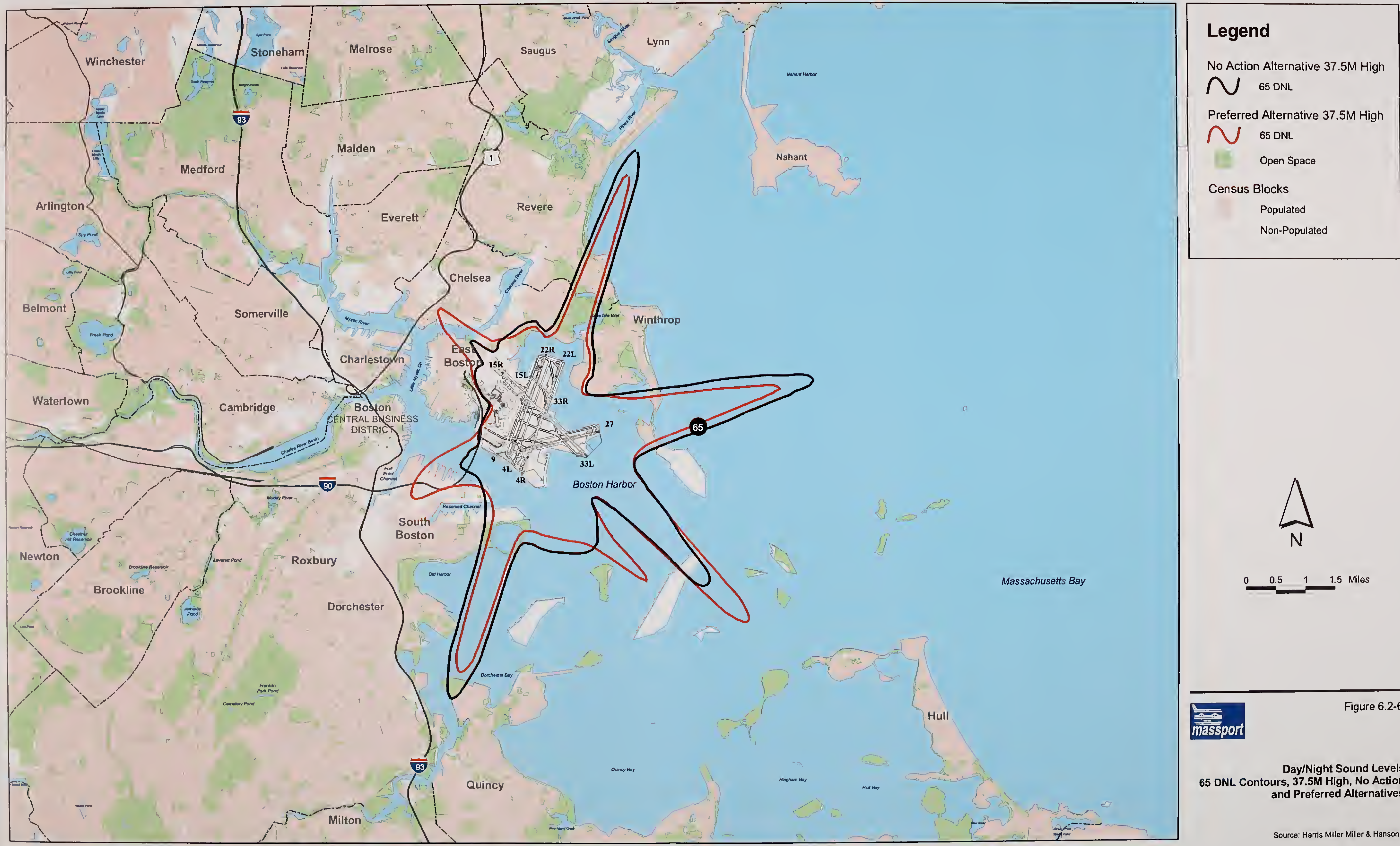


Figure 6.2-5

Day/Night Sound Levels
65 DNL Contours, 29M Low - No Action and Preferred Alternatives

Source: Harris Miller Miller & Hanson



massport

Figure 6.2-6

Day/Night Sound Levels 65 DNL Contours, 37.5M High, No Action and Preferred Alternatives

Source: Harris Miller Miller & Hanson

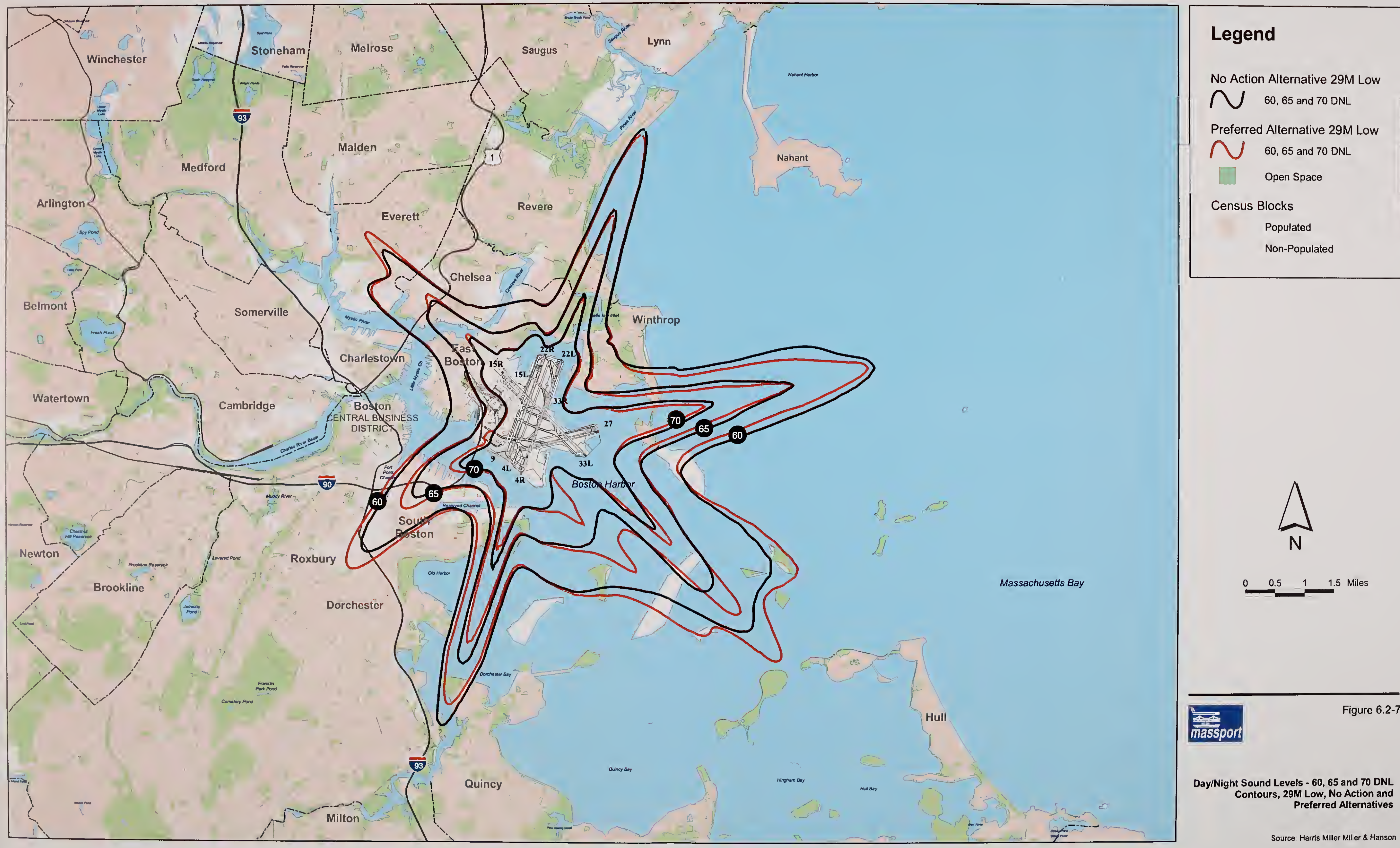


Figure 6.2-7

Day/Night Sound Levels - 60, 65 and 70 DNL Contours, 29M Low, No Action and Preferred Alternatives

Source: Harris Miller Miller & Hanson

Figure 6.2-8

Day/Night Sound Levels - 60, 65 and 70 DNL Contours, 37.5M High, No Action and Preferred Alternatives

Source: Harris Miller Miller & Hanson

6.2.3.1 Comparison of The No Action Alternative and the Preferred Alternative

29M Low Fleet Scenario

Figure 6.2-7 compares the DNL contours for the Preferred Alternative with the No Action Alternative for the near-term 29M Low Fleet. In general, the No Action Alternative produces more delay and poorer compliance with PRAS goals.

With the addition of Runway 14/32, noise exposure decreases off the approach end of Runway 4R in the City Point area of South Boston but only at lower levels of exposure between DNL 60 dB and 65 dB; no one in this area is exposed to noise above a DNL of 65 dB. To the southwest, consistent with achievement of PRAS goals, departure noise from Runway 27 increases with the addition of Runway 14/32, adding to the exposure in that area of South Boston both in the increment from DNL 65 dB to 70 dB and also further to the southwest in the increment from 60 to 65 dB, though the increases are less than 1.5 dB in both areas. Exposure due to takeoffs over East Boston and Chelsea is relatively unchanged under the Preferred Alternative given that there are only minor differences in runway use between the No Action and Preferred Alternative, and aircraft departing from Runway 33L generally make 15 degree left turns up the Mystic River. However, in those neighborhoods directly aligned with Runway 33L/15R there are small increases in exposure of less than 1.5 dB due to increases in arriving air traffic on Runway 15R.

Exposure in Revere is very slightly reduced, while the remaining areas of Winthrop, near and on Point Shirley, experience decreased exposure due to decreased use of Runway 9 for departures. Increased use of both Runway 15R and the new Runway 14 for departures, combined with their added use in the opposite direction for landings (to Runways 33L and 32) , will cause increased exposure over Long Island and other Boston Harbor Islands, generally in the range of DNL 60 dB to 65 dB. Noise exposure further to the southeast in Hull is expected to be less than DNL 60 dB.

37.5M High Fleet Scenario

Under the long-term 37.5M High Fleet, the above noise exposure patterns are more pronounced, as seen in Figure 6.2-8. Exposure in South Boston, east of D Street, which is affected by departures from Runway 27, increases approximately 5 dB DNL. Increased departures on Runway 33L and increased arrivals on Runway 15R produce approximately 4 dB DNL higher exposure in portions of East Boston and Chelsea. For other communities surrounding Logan noise exposure declines by 2 to 3 dB DNL under the Preferred Alternative.

The Harbor Islands will generally receive increases in DNL from 3 to 5 dB due to better achievement of the PRAS goals for departures on Runway 15R and arrivals on Runway 33L.

6.3.2.2 Comparison of 1998 Actual Exposure with the 29M Low No Action Alternative

To give additional context, Figure 6.2-9 compares the 60, 65, and 70 dB DNL contours for the 29 M Low Fleet scenario with 1998 exposure levels. The 29M Low Fleet scenario is used in this discussion because it most closely resembles current activity levels at Logan Airport.

Differences between the two cases occur in several areas– the 1998 contours are larger than the 29M Low Fleet No Action contours over much of Winthrop (including Point Shirley) and in South Boston off of Runway 27. Conversely, in East Boston and Chelsea off the departure end of Runway 33L, the 1998 contours are smaller than the 29M Low Fleet No Action Alternative. There are three basic reasons for these differences.

The 1998 contours are generally larger than those for the 29M Low Fleet scenario because the latter has fewer Stage 2 aircraft, including 17 percent fewer at night (see Table 6.2-1). Thate smaller number accounts for a 3 to 4 dB improvement in average exposure around the entire airport when compared to 1998. A reduction of similar magnitude was anticipated in the *Logan Airport 1998 Annual Update*, where Figure 5-8 depicted the anticipated improvement in exposure off of Runway 27 if *no* Stage 2 aircraft were to remain in the 1998 fleet. Based on this analysis, the fact that fleet differences exist between 1998 and the No Action Alternative should not imply that the 29M Low Fleet scenario is inaccurate or unrepresentative of the future. The No Action Alternative is based on passenger demand that exceeds 1998 levels by only 2.5 million people, and it assumes a higher use of Stage 3 aircraft than occurred in 1998. The 29M Low Fleet represents an upper bound on near-term noise exposure since all US aircraft with maximum gross takeoff weights greater than 75,000 pounds must comply with Stage 3 criteria as of January 1, 2000.

Another important difference between the 1998 and the No Action Alternative noise contours pertains to the departure corridor for Runway 27. The 1998 corridor is based on a large sample of radar data taken from Massport's noise monitoring system after the FAA implemented a new jet departure procedure in accordance with the FAA Record of Decision (ROD) on the Runway 27 EIS. The Airside Draft EIS/EIR, however, was under way well before the ROD, and could only approximate how the new departure procedure would be specified by the FAA. The difference in model inputs creates a slight clockwise (westward) shift to the contours off of Runway 27 for each of the Airside Project Alternatives compared to 1998. It does not represent a real difference in corridor location or noise between the two scenarios. It does, however, contribute to the large difference in population counts between 1998 and the 29M Low No Action Alternative in South Boston.

A third cause for differences in the noise contours is due to variations in assumed runway utilization. For valid statistical modeling purposes the Airside Project alternatives utilize 10-year weather data and corresponding runway assignments. Since weather patterns have a major effect on runway use, and since weather varies substantially from year to year, modeled results will invariably differ from any actual year.

In sum, the fleet, flight track, and runway assignment differences all help explain the differences in noise contours shown in Figure 6.2-9.

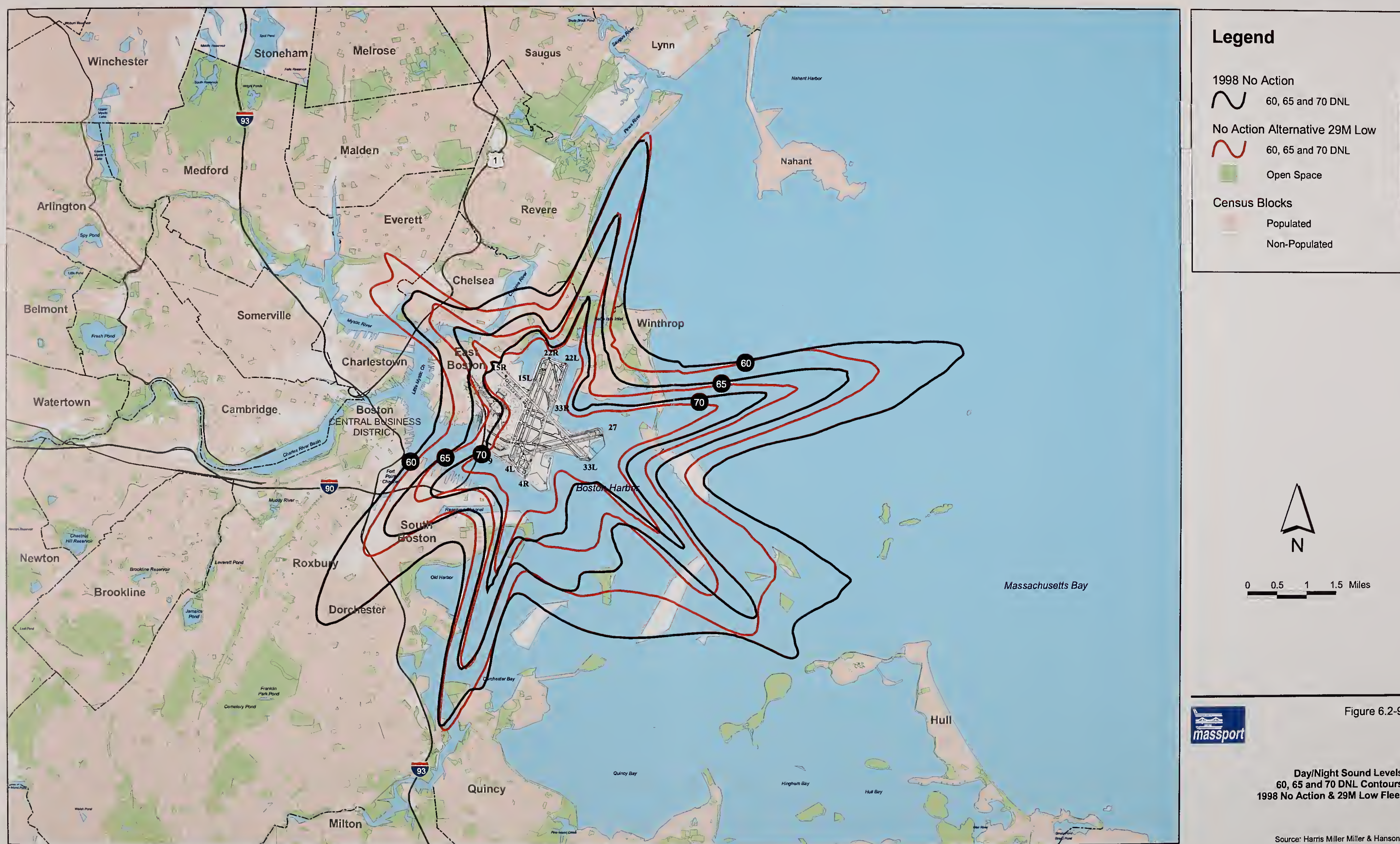


Figure 6.2-9

Day/Night Sound Levels
60, 65 and 70 DNL Contours
1998 No Action & 29M Low Fleet

Source: Harris Miller Miller & Hanson

6.2.4 Area-wide Cumulative Noise Exposed Population

Estimates of the number of people residing within various 5 dB increments of noise exposure for the 29M Low Fleet and 37.5M High Fleet scenarios under the No Action and Preferred Alternatives are summarized in Table 6.2-5. Included in this table are the 1998 populations for reference (population summaries for the 29M High Fleet, 37.5M Low Fleet, and 45M High Fleet scenarios are found in Appendix L of the Airside Project Draft EIS/EIR and Appendix E of this Supplemental DEIS/FEIR). It is notable that under all of the improvement alternatives, the population exposed to each value of DNL (greater than or equal to 60 through 75 dB) is significantly less than that of either the 1993 modeled historical or the 1998 actual noise-exposed populations. This improvement is due to the January 1, 2000 phase-out of the noisier Stage 2 aircraft having a maximum gross takeoff weight greater than 75,000 pounds.

Table 6.2-5
Summary of Noise-Exposed Population

Day-Night Sound Level in dB	1998 Actual	No Action Alternative (Alt. 4)	Preferred Alternative (Alt. 1A)	Preferred Alt. Compared to No Action	Percent Change *re* No Action
29M Low Fleet					
DNL 75 dB and above	577	257	77	-180	-70%
DNL 70 dB and above	2,679	1,521	1,459	-62	-4%
DNL 65 dB and above	23,296	17,531	17,909	378	2%
DNL 60 dB and above	93,860	59,523	60,418	895	2%
37.5M High Fleet					
DNL 75 dB and above	577	257	58	-199	-77%
DNL 70 dB and above	2,679	3,828	1,028	-2,800	-73%
DNL 65 dB and above	23,296	11,499	12,007	508	4%
DNL 60 dB and above	93,860	41,659	52,153	10,494	25%

1 Except for 1998, all estimates are based on runway use chosen to most nearly achieve PRAS goals and reflect the effects of delayed aircraft as determined by the DELAYSIM model.

2 References to 29M Low Fleet and 37.5M High Fleet scenarios do not apply to 1993 or 1998; they are applicable only to The Preferred and No Action Alternatives.

3 Where applicable, counts now include 502 institutional residents of Long Island in Boston Harbor. None of these individuals is exposed to noise greater than DNL of 65 dB under any of the study scenarios; they do, however, experience DNL values of 60 to 65 dB in some cases but were not previously counted in the Airside Project Draft EIS/EIR or the Logan Airport GEIR and its Annual Updates.

As shown in Table 6.2-5, the Preferred Alternative significantly reduces the population exposed to DNL values greater than or equal to 70 and 75 dB. The benefits range from 70 to 77 percent for exposures greater than or equal to 75 dB, and from 4 to 73 percent for values of 70 dB and more. These reductions are a direct result of the implementation of Runway 14/32, which enables FAA controllers to better achieve PRAS goals that were specifically designed to give relief to the populations experiencing the most airport noise.

These benefits at high exposure levels cause increases in population within the 65 dB contour for the Preferred Alternative; they range from 2 to 4 percent, while increases within the 60 dB DNL contour range from 1 to 25 percent.

Noise exposed populations are broken down by community area in Tables 6.2-6 and 6.2-7. The first presents the exposed populations for the 29M Low Fleet scenario while Table 6.2-7 presents similar data for the 37.5M High Fleet scenario. At a DNL of 70 dB or greater, the most heavily affected communities are East Boston and Winthrop. Revere becomes heavily affected at these exposure levels with the higher fleet forecast. At 65 dB or greater, Chelsea and South Boston are added to the list of impacted communities (similar tables for the other fleets were in Appendix L of the Airside Project Draft EIS/EIR, and are summarized in Appendix E of this Supplemental DEIS/FEIR).

An analysis of the neighborhoods exposed to noise levels greater than or equal to 70 dB indicates that Runway 14/32 is projected to reduce impacts for those areas most affected by airport noise. For example, under the No Action Alternative for the 29M Low Fleet scenario, approximately 200 residents of Point Shirley are projected to reside within the 75 dB DNL contour; however, under the Preferred Alternative, 60 percent, or about 120 Point Shirley residents, would benefit from a reduction in noise sufficiently large to remove them from the 75 dB DNL contour. In addition, a total of approximately 860 residents of Point Shirley are exposed to noise above a DNL of 70 dB if no action is taken; this number is reduced to about 675 with the Preferred Alternative. Still larger numbers of Point Shirley residents benefit from the Preferred Alternative at lower DNL levels. In addition, East Boston's Orient Heights neighborhood is projected to experience a small reduction in population within the 75 and 70 dB contours with the Preferred Alternative compared to the No Action Alternative. These reductions are the result of the additional flexibility available to air traffic controllers in the selection of runways and hence a greater ability to achieve PRAS long-term and short-term noise goals.

Table 6.2-6
Noise-Exposed Population by Town or Neighborhood Area – 29M Low Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action Alternative 4	Preferred Alternative 1A	Preferred Alt. Compared to No Action	Percent Change *re* No Action
Chelsea					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	3,056	3,300	244	8%
DNL 60 dB and above	9,222	10,232	10,370	138	1%
Everett					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	0	220	340	120	54%
E. Boston – Eagle Hill					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	280	280	0	0%
DNL 65 dB and above	2,280	4,134	4,134	0	0%
DNL 60 dB and above	19,040	15,921	15,921	0	0%
E. Boston – Orient Hts/ Bayswater St.					
DNL 75 dB and above	58	58	0	-58	-100%
DNL 70 dB and above	239	157	118	-39	-25%
DNL 65 dB and above	1,742	612	751	139	23%
DNL 60 dB and above	5,128	4,332	4,457	125	3%
Other East Boston					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	351	0	0	0	0%
DNL 65 dB and above	3,940	2,371	2,371	0	0%
DNL 60 dB and above	6,228	5,782	5,782	0	0%
Total East Boston(1)					
DNL 75 dB and above	58	58	0	–58	–100%
DNL 70 dB and above	590	437	398	–39	–9%
DNL 65 dB and above	7,962	7,117	7,256	139	2%
DNL 60 dB and above	30,396	26,035	26,160	125	<1%
Long Island					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	502	0	502	502	n/a

Table 6.2-6 (Cont'd.)
Noise-Exposed Population by Town or Neighborhood Area – 29M Low Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action Alternative 4	Preferred Alternative 1A	Preferred Alt. Compared to No Action	Percent Change *re* No Action
Revere					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	3,168	3,001	2,999	–2	<–1%
DNL 60 dB and above	5,300	5,227	5,115	–112	<–1%
South Boston(2)					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	48	0	0	0	0%
DNL 65 dB and above	3,553	66	98	32	48%
DNL 60 dB and above	22,511	6,010	6,603	593	9%
Boston (Other)(3)					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	10,809	0	0	0	0%
Winthrop - Point Shirley					
DNL 75 dB and above	519	199	77	–122	–61%
DNL 70 dB and above	1,266	862	673	–189	–22%
DNL 65 dB and above	2,195	1,924	1,649	–275	–14%
DNL 60 dB and above	4,080	2,973	2,657	-316	-11%
Winthrop - Court Road					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	731	222	388	166	75%
DNL 65 dB and above	3,387	1,523	1,763	240	16%
DNL 60 dB and above	3,387	3,387	3,387	0	0%
Rest of Winthrop					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	44	0	0	0	0%
DNL 65 dB and above	3,031	844	844	0	0%
DNL 60 dB and above	7,653	5,439	5,284	-155	-3%
Total Winthrop					
DNL 75 dB and above	519	199	77	–122	–61%
DNL 70 dB and above	2,041	1,084	1,061	–23	–2%
DNL 65 dB and above	8,613	4,291	4,256	–35	–1%
DNL 60 dB and above	15,120	11,799	11,328	–471	–4%
Total Population Summary					
DNL 75 dB and above	577	257	77	-180	-70%
DNL 70 dB and above	2,679	1,521	1,459	–62	-4%
DNL 65 dB and above	23,296	17,531	17,909	378	2%
DNL 60 dB and above	93,860	59,523	60,418	895	2%

1. The only area in South Boston included within the 60 dB DNL contour for these scenarios is the D Street area.
2. "Boston (Other)" includes Back Bay, Dorchester, Jamaica Plain, Roxbury, and the South End.
3. Except for 1998, all estimates are based on runway use chosen to most nearly achieve PRAS goals and reflect the effects of delayed aircraft as determined by the DELAYSIM model.
4. References to 29M Low and 37.5M High Fleet scenarios do not apply to 1998; they are applicable only to Alternatives 1A and 4.

Table 6.2-7
Noise-Exposed Population by Town or Neighborhood Area - 37.5M High Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action Alternative 4	Preferred Alternative 1A	Preferred Alt. Compared to No Action	Percent Change *re* No Action
Chelsea					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	1,415	1,415	n/a
DNL 60 dB and above	9,222	3,095	8,488	5,393	174%
Everett					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	0	0	0	0	0%
E. Boston – Eagle Hill					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	2,280	237	2,593	2,356	994%
DNL 60 dB and above	19,040	5,058	12,379	7,321	145%
E. Boston – Orient Hts/ Bayswater St.					
DNL 75 dB and above	58	58	58	0	0%
DNL 70 dB and above	239	355	157	–198	–56%
DNL 65 dB and above	1,742	1,170	596	–574	–49%
DNL 60 dB and above	5,128	5,128	3,451	-1,677	-33%
Other East Boston					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	351	0	0	0	0%
DNL 65 dB and above	3,940	1,599	1,058	–541	–34%
DNL 60 dB and above	6,228	4,602	5,170	568	12%
Total East Boston(1)					
DNL 75 dB and above	58	58	58	0	0%
DNL 70 dB and above	590	355	157	–198	–56%
DNL 65 dB and above	7,962	3,006	4,247	1,241	41%
DNL 60 dB and above	30,396	14,788	21,000	6,212	42%
Long Island					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	502	0	502	502	n/a

Table 6.2-7 (cont.)
Noise-Exposed Population by Town or Neighborhood Area -- 37.5M High Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action Alternative 4	Preferred Alternative 1A	Preferred Alt. Compared to No Action	Percent Change *re* No Action
Revere					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	2,260	172	–2,088	–92%
DNL 65 dB and above	3,168	3,799	3,293	–506	–13%
DNL 60 dB and above	5,300	8,472	5,658	–2,814	–33%
South Boston(2)					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	48	0	0	0	0%
DNL 65 dB and above	3,553	55	48	–7	–13%
DNL 60 dB and above	22,511	3,094	6,002	2,908	94%
Boston (Other)(3)					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	10,809	674	432	–242	–36%
Winthrop - Point Shirley					
DNL 75 dB and above	519	199	0	–199	–100%
DNL 70 dB and above	1,266	825	417	–408	–49%
DNL 65 dB and above	2,195	1,863	1,395	–468	–25%
DNL 60 dB and above	4,080	2,828	2,401	-427	-15%
Winthrop - Court Road					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	731	388	282	–106	–27%
DNL 65 dB and above	3,387	1,661	1,234	–427	–26%
DNL 60 dB and above	3,387	3,387	3,387	0	0%
Rest of Winthrop					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	44	0	0	0	0%
DNL 65 dB and above	3,031	1,115	375	–740	–66%
DNL 60 dB and above	7,653	5,321	4,283	-1,038	-20%
Total Winthrop					
DNL 75 dB and above	519	199	0	–199	–100%
DNL 70 dB and above	2,041	1,213	699	–514	–42%
DNL 65 dB and above	8,613	4,639	3,004	–1,635	–35%
DNL 60 dB and above	15,120	11,536	10,071	–1,465	–13%
Total Population Summary					
DNL 75 dB and above	577	257	58	–199	–77%
DNL 70 dB and above	2,679	3,828	1,028	–2,800	–73%
DNL 65 dB and above	23,296	11,499	12,007	508	4%
DNL 60 dB and above	93,860	41,659	52,153	10,494	25%

1. "Boston (Other)" includes Back Bay, Dorchester, Jamaica Plain, Roxbury, and the South End.
2. Except for 1998, all estimates are based on runway use chosen to most nearly achieve PRAS goals and reflect the effects of delayed aircraft as determined by the DELAYSIM model.
3. References to 29M Low and 37.5M High Fleets do not apply to 1998; they are applicable only to Altematives 1A and 4.

In the 37.5M High Fleet scenario, greater benefits are realized. Approximately 100 more residents of Winthrop located along Court Road plus more than 2,000 residents of Revere and nearly 200 people in Orient Heights are no longer included in the highest exposure levels. In fact in this scenario, some 2,800 people would no longer be exposed to DNL levels above 70 dB if Runway 14/32 were constructed and used as projected. The tradeoff for this improvement is that a net of some 500 people (approximately 4 percent of the total noise-exposed population around Logan Airport) have their exposure increased to DNL 65 dB.

6.2.4.1 Population Experiencing Significant Shifts in Noise Exposure

FAA Criteria

The FAA standards for assessing changes in noise-exposed populations center around two factors: the absolute levels of noise which residents experience and the magnitude of the change to which they are exposed. In particular, both FAA Order 1050.1D entitled *Policies and Procedures for Considering Environmental Impacts* and FAA Order 5050.4A entitled *Airport Environmental Handbook* indicate that changes in DNL of 1.5 dB or more are considered significant when DNL values are greater than 65 dB. Further, if there are populated areas above 65 dB DNL where the project-related noise does change by more than 1.5 dB, then areas between 60 dB DNL and 65 dB DNL are also examined to determine if there are any residential areas where the project–related noise changes by more than 3.0 dB. This analysis must be conducted for all reasonably foreseeable scenarios, which for this Supplemental DEIS/FEIR are considered to be the No Action and Preferred Alternatives for the near-term 29M Low Fleet scenario. The 37.5M High Fleet and the 37.5M High RJ Fleet which are considered later in this chapter are considered to be longer-term forecasts and are more speculative in nature.

Table 6.2-8 summarizes the numbers of people who meet these criteria for assessing noise exposure for the No Action and the Preferred Alternatives under the 29M Low Fleet scenario. The table is divided into two sections – the top half addresses the segment of population that becomes newly included within the specified criteria under the Preferred Alternative; the bottom half summarizes those people whose noise exposure declines as a result of the Preferred Alternative. A zero indicates that no one will experience a change of the magnitude specified if the Preferred Alternative is implemented.

Table 6.2-8
Population Affected by Significant Shifts in Noise Exposure Resulting From the Preferred Alternative, Per FAA Criteria for Significant Impact - 29M Low Fleet Scenario

	Newly Included Population		
	DNL 65 to 70 dB	DNL 70 to 75 dB	DNL greater than 75 dB
Community	Increase of 1.5 or more dB	Increase of 1.5 or more dB	Increase of 1.5 or more dB
Chelsea	0	0	0
Dorchester	0	0	0
E. Boston	0	0	0
Everett	0	0	0
Long Island	0	0	0
Revere	0	0	0
Roxbury	0	0	0
S. Boston	0	0	0
Winthrop	0	0	0
Total	0	0	0
	Decrease of 1.5 or more dB	Decrease of 1.5 or more dB	Decrease of 1.5 or more dB
Chelsea	0	0	0
Dorchester	0	0	0
E. Boston	0	0	0
Everett	0	0	0
Long Island	0	0	0
Revere	0	0	0
Roxbury	0	0	0
S. Boston	0	0	0
Winthrop	219	189	0
Total	219	189	0

Secretary of the Office of Environmental Affairs Request under MEPA

In addition to standard FAA impact criteria used to judge this project, the May 7, 1999 EOEA Certificate on the Airside Project Draft EIS/EIR requested that the Final EIR report on the number of people located within the 60 to 65 dB DNL whose noise exposure had changed by 1.5 dB or more. Table 6.2-9 reports these counts.

Table 6.2-9
Population Affected by Significant Shifts in Noise Exposure Resulting From The Preferred Alternative, 29M Low Fleet Scenario Per MEPA Request

Community	Newly Included Population							
	DNL 60 to 65 dB		DNL 65 to 70 dB		DNL 70 to 75 dB		DNL greater than 75 dB	
	Increase of less than 3 dB	Increase of 3 or more dB	Increase of less than 1.5 dB	Increase of 1.5 or more dB	Increase of less than 1.5 dB	Increase of 1.5 or more dB	Increase of less than 1.5 dB	Increase of 1.5 or more dB
Chelsea	138	0	347	0	0	0	0	0
Dorchester	0	0	0	0	0	0	0	0
E. Boston	125	0	139	0	0	0	0	0
Everett	120	0	0	0	0	0	0	0
Long Island	0	502	0	0	0	0	0	0
Revere	0	0	0	0	0	0	0	0
Roxbury	0	0	0	0	0	0	0	0
S. Boston	1,001	0	32	0	0	0	0	0
Winthrop	76	0	240	0	166	0	0	0
Total	1,460	502	758	0	166	0	0	0
	Newly Excluded Population							
	DNL 60 to 65 dB		DNL 65 to 70 dB		DNL 70 to 75 dB		DNL greater than 75 dB	
	Decrease of less than 3 dB	Decrease of 3 or more dB	Decrease of less than 1.5 dB	Decrease of 1.5 or more dB	Decrease of less than 1.5 dB	Decrease of 1.5 or more dB	Decrease of less than 1.5 dB	Decrease of 1.5 or more dB
Chelsea	0	0	103	0	0	0	0	0
Dorchester	0	0	0	0	0	0	0	0
E. Boston	0	0	0	0	39	0	58	0
Everett	0	0	0	0	0	0	0	0
Long Island	0	0	0	0	0	0	0	0
Revere	112	0	2	0	0	0	0	0
Roxbury	0	0	0	0	0	0	0	0
S. Boston	408	0	0	0	0	0	0	0
Winthrop	547	0	56	219	0	189	122	0
Total	1,067	0	161	219	39	189	180	0
	Net Change (Newly Included – Newly Excluded)							
Total	393	502	597	(219)	127	(189)	(180)	0

This analysis shows that the Preferred Alternative reduces the number of people exposed to high noise levels in portions of Winthrop, East Boston and Revere. To achieve these reductions, the noise is redistributed more in line with the PRAS goals causing increased noise at lower exposure levels in the communities of Chelsea, East Boston (near the departure end of Runway 33L), and South Boston.

6.2.5 Other Indicators of Changed Exposure

Besides population counts, other metrics such as computed noise levels at specific points also are used to identify changes in aircraft noise. In these analyses, the selected points coincide with 21 of Massport's permanent noise monitoring locations along with two temporary measurement sites that were used to collect additional data for the Airside Project. These sites and respective analyses are presented in Chapter 5 of the Airside Project Draft EIS/EIR. They have been updated to show results for 1998 actual operations where available. The five additional metrics reported at each site are:

- Day-Night Sound Level (DNL)
- Nighttime (10:00 PM to 7:00 AM) Equivalent Sound Level (LeqN)
- Maximum Sound Level (Lmax)
- Time-Above 55, 65, 75, 85, and 95 dBA during Nighttime hours (TAN), and
- Time-Above 55, 65, 75, 85, and 95 dBA for full 24 hour periods (TA24).

6.2.5.1 Day Night Sound Levels (DNL)

The calculations of DNL by noise monitoring location for the 29M Low Fleet scenario and the 37.5M High Fleet scenario are presented in Table 6.2-10 and Table 6.2-11, respectively. Similar tables for all other study fleets were contained in Appendix L of the Airside Project Draft EIS/EIR. The future year noise is less than that in 1998 at most locations and both Alternatives, reflecting the replacement of Stage 2 aircraft with quieter Stage 3 aircraft.

At the bottom of Tables 6.2-10 and 6.2-11, average changes in noise level for the 29M Low Fleet and 37.5M High Fleet scenarios are compared for different exposure levels. The Preferred Alternative, which includes Runway 14/32, shows the greatest reduction in DNL when compared to the No Action Alternative under the 37.5M High Fleet scenario. At three of the four close-in sites where projected DNL levels exceed 70 dB under the No Action Alternative for the 29M Low Fleet scenario, the Preferred Alternative reduces exposure levels by 0.1 to 0.9 dB. Under the 37.5M High Fleet scenario, the Preferred Alternative decreases noise at sites above 70 dB by 1.4 dB to 2.2 dB. (See Table 6-2.14 in the Airside Project Draft EIS/EIR for comparisons to other alternatives). The differences in the DNL between the Preferred Alternative and the No Action Alternative are principally the result of the airfield improvements that affect the Air Traffic Control Tower's ability to achieve PRAS recommendations.

Table 6.2-10
INM-Computed Day-Night Sound Levels (DNL) due to Flight Operations - 29M Low Fleet

Noise Monitor	Location	1998 Existing Fleet	Alternative 4 No Action	Alternative 1A Full Build Without Peak Period Pricing	Change (in dB) Alt 1A – Alt 4
1	Andrews Street, South End	58.7	56.0	56.9	0.9
2	B & Bolton, South Boston	66.7	63.4	64.5	1.1
3	South Boston Yacht Club, South Boston	64.5	62.8	61.3	-0.5
4	Bayview & Grandview, Winthrop	79.4	76.1	75.2	-0.9
5	Harborview & Faun Bar, Winthrop	71.4	69.8	68.1	-1.7
6	Somerset & Johnson, Winthrop	68.2	65.3	65.5	0.2
7	Loring Road Near Court Road, Winthrop	76.1	73.6	75.1	1.5
8	Morton & Amelia, Winthrop	67.5	64.8	64.7	-0.1
9	Bayswater & Nancia, East Boston	72.4	70.6	70.4	-0.2
10	Bayswater & Shawsheen, East Boston	66.3	64.7	65.1	0.4
11	Don Orione, East Boston	62.2	60.3	60.4	0.1
12	East Boston Yacht Club, East Boston	74.0	70.1	70.0	-0.1
13	East Boston High School, East Boston	64.2	66.2	66.0	-0.2
A	Sumner near Lamson, East Boston	N/A	61.2	61.2	0.0
14	Jeffries Point Yacht Club, East Boston	64.9	62.6	62.5	-0.1
15	Admiral's Hill, Chelsea	61.1	63.7	63.7	0.0
16	Bradstreet Avenue & Sales, Revere	69.0	69.1	68.7	-0.4
17	Carey Circle, Revere	58.3	59.0	58.7	-0.3
23	Myrtlebank/Hilltop, Dorchester	52.0	53.4	52.0	-1.4
24	Cunningham Park, Milton	51.9	52.3	51.0	-1.3
25	Squaw Rock Park, Quincy	51.2	49.1	48.7	-0.4
26	Hull High School, Hull	58.1	54.8	55.0	0.2
E	Farragut @ 2nd, South Boston	N/A	62.5	61.3	-1.2
Average change from 70 dB and above Between Alts 4 and 1A (4 Sites)					**0.1**
Average change from 65 dB and above Between Alts 4 and 1A (8 Sites)					**-0.2**
Average change from all values Between Alts 4 and 1A (23 Sites)					**-0.2**

Table 6.2-11
INM-Computed Day-Night Sound Levels (DNL) due to Flight Operations - 37.5M High Fleet

Noise Monitor	Location	1998 Actual Fleet	Alternative 4 No Action	Alternative 1A Full Build Without Peak Period Pricing	Change (in dB) Alt 1A – Alt 4
1	Andrews Street, South End	58.7	52.3	56.9	4.6
2	B & Bolton, South Boston	66.7	58.7	63.8	5.1
3	South Boston Yacht Club, South Boston	64.5	65.4	62.6	-2.8
4	Bayview & Grandview, Winthrop	79.4	76.2	74.1	-2.1
5	Harborview & Faun Bar, Winthrop	71.4	69.4	67.0	-2.4
6	Somerset & Johnson, Winthrop	68.2	65.2	64.7	-0.5
7	Loring Road Near Court Road, Winthrop	76.1	75.5	74.1	-1.4
8	Morton & Amelia, Winthrop	67.5	66.0	64.0	-2.0
9	Bayswater & Nancia, East Boston	72.4	72.7	70.5	-2.2
10	Bayswater & Shawsheen, East Boston	66.3	65.9	64.3	-1.6
11	Don Orione, East Boston	62.2	61.2	59.5	-1.7
12	East Boston Yacht Club, East Boston	74.0	70.4	68.8	-1.6
13	East Boston High School, East Boston	64.2	60.9	64.4	3.5
A	Sumner near Lamson, East Boston	N/A	60.0	60.1	0.1
14	Jeffries Point Yacht Club, East Boston	64.9	61.7	61.6	-0.1
15	Admiral's Hill, Chelsea	61.1	58.8	62.5	3.7
16	Bradstreet Avenue & Sales, Revere	69.0	72.3	70.1	-2.2
17	Carey Circle, Revere	58.3	62.5	60.3	-2.2
23	Myrtlebank/Hilltop, Dorchester	52.0	56.3	54.0	-2.3
24	Cunningham Park, Milton	51.9	55.3	53.1	-2.2
25	Squaw Rock Park, Quincy	51.2	51.0	49.4	-1.6
26	Hull High School, Hull	58.1	54.4	55.6	1.2
E	Farragut @ 2nd, South Boston	N/A	64.5	61.7	-2.8
Average change from 70 dB and above Between Alts 4 and 1A (5 Sites)					**-1.9**
Average change from 65 dB and above Between Alts 4 and 1A (10 Sites)					**-1.9**
Average change from all values Between Alts 4 and 1A (23 Sites)					**-0.6**

6.4.5.2 Nighttime Equivalent Sound Level (LeqN)

Table 6.2-12 presents the calculations of nighttime equivalent sound level (LeqN) for the 29M Low Fleet scenario. The LeqN is lower than DNL because the number of nighttime operations is much smaller than the number of daytime operations and because there is no 10dB nighttime penalty as in the DNL. The change in (LeqN) ranges from an increase of 3.2 dB to a decrease of 3.1 dB, with sites overall averaging a decrease of 0.1 dB for the Preferred Alternative compared to the No Action Alternative. Similar LeqN tables for other fleets, including the 37.5M High Fleet scenario, are contained in Appendix L of the Airside Project Draft EIS/EIR.

6.2.5.4 Maximum Sound Level (Lmax)

Table 6.2-13 compares the maximum sound level (Lmax) of the Preferred Alternative to the Lmax of the No Action Alternative for the 29M Low Fleet and 37.5M High Fleet scenarios. These values are for the aircraft operation that has the highest Lmax, whereas the values in the previous tables were for the cumulative noise exposure for all aircraft operations. In Table 6.2-13, the same aircraft operation is usually responsible for the highest value of Lmax in each fleet for all Alternatives, even though the number of its operations varies among the Alternatives. The values of Lmax in the 37.5M High Fleet scenario are generally less than those in the 29M Low Fleet scenario, primarily because of differences in the scheduled air carrier aircraft types – some Stage 2 aircraft that appear in the lower fleet forecast have been replaced with quieter Stage 3 aircraft in the longer-termforecast. These Lmax values are not as useful for assessing the relative noise among various locations and fleets as are the cumulative metrics such as DNL because they represent extreme values, rather than typical values, and because they do not consider how often the noise events occur. Similar Lmax tables for all fleets are contained in Appendix L of the Airside Project Draft EIS/EIR.

6.2.5.5 Time-Above 24-Hour (TA24)

Table 6.2-14 shows the 24-hour time-above (TA24) calculated for threshold values of 55 dB to 95 dB for the Preferred Alternative and the No Action Alternative under the 29M Low Fleet scenario. Comparison of these TA24 data show that the Preferred Alternative reduces the time-above various thresholds at most locations by about 20 to 40 percent. Maximum values of TA24for the No Action Alternative are found at locations 4 (Bayview and Grandview) and 7 (Loring Road near Court Road in Winthrop) which have 2 and 1 minutes above 95 dB, and 17 and 11 minutes above 85 dB, respectively. These two locations also have the highest DNL values. The other locations that have more than one minute per day above 85 dB have DNL values of 69 to 70 dB.

6.2.5.6 Time-Above Night (TAN)

Table 6.2-15 presents the corresponding time-above data for the nine hour nighttime period (TAN). These time-above values are much smaller than those for the entire 24- hour day because of the shorter time period and the reduction in the level of aircraft operations.

Table 6.2-12
Comparisons of INM-Computed Nighttime Equivalent Sound Levels (LeqN) from Flight Operations for the 29M Low Fleet Scenario

Noise Monitor	Location	No Action Alternative	Preferred Alternative	Change (in dB) No Action - Preferred
1	Andrews Street, South End	48.8	46.0	-2.8
2	B & Bolton, South Boston	56.3	53.2	-3.1
3	South Boston Yacht Club, South Boston	54.0	54.1	+0.1
4	Bayview & Grandview, Winthrop	67.3	67.7	+0.4
5	Harborview & Faun Bar, Winthrop	61.8	61.1	-0.7
6	Somerset & Johnson, Winthrop	57.6	57.7	+0.1
7	Loring Road Near Court Road, Winthrop	65.1	68.3	+3.2
8	Morton & Amelia, Winthrop	55.8	56.7	+0.9
9	Bayswater & Nancia, East Boston	62.0	62.6	+0.6
10	Bayswater & Shawsheen, East Boston	55.9	57.5	+1.6
11	Don Orione, East Boston	51.8	52.8	+1.0
12	East Boston Yacht Club, East Boston	62.3	63.0	+0.7
13	East Boston High School, East Boston	60.1	57.8	-2.3
A	Sumner near Lamson, East Boston	54.4	54.0	-0.4
14	Jeffries Point Yacht Club, East Boston	55.5	54.8	-0.7
15	Admiral's Hill, Chelsea	57.5	55.3	-2.2
16	Bradstreet Avenue & Sales, Revere	61.6	61.8	+0.2
17	Carey Circle, Revere	51.3	51.6	+0.3
23	Myrtlebank/Hilltop, Dorchester	44.9	45.0	+0.1
24	Cunningham Park, Milton	44.0	44.1	+0.1
25	Squaw Rock Park, Quincy	41.1	41.4	+0.3
26	Hull High School, Hull	47.9	47.3	-0.6
E	Farragut @ 2nd, South Boston	53.7	53.7	0.0

Table 6.2-13
Comparison of Maximum Sound Level (Lmax) Values from Flight Operations for the No Action and Preferred Alternatives – 29M Low and 37.5M High Fleet Scenarios

Noise Monitor	Location	No Action Alternative		Preferred Alternative	
		29M Low	37.5M High	29M Low	37.5M High
1	Andrews Street, South End	89.5	84.5	89.5	84.5
2	B & Bolton, South Boston	99.2	93.0	99.2	93.0
3	South Boston Yacht Club, South Boston	94.4	91.8	94.4	86.8
4	Bayview & Grandview, Winthrop	107.2	101.4	112.3	106.1
5	Harborview & Faun Bar, Winthrop	99.7	93.3	100.7	94.3
6	Somerset & Johnson, Winthrop	90.4	81.9	90.4	81.9
7	Loring Road near Court Road, Winthrop	104.7	97.1	104.7	97.1
8	Morton & Amelia, Winthrop	102.5	97.3	102.5	97.3
9	Bayswater & Nancia, E. Boston	107.7	103.9	107.7	103.9
10	Bayswater & Shawsheen, East Boston	96.5	90.1	96.5	90.1
11	Don Orione, East Boston	90.3	83.8	90.3	83.8
12	East Boston Yacht Club, East Boston	93.0	85.8	93.0	85.8
13	East Boston High School, East Boston	102.0	97.0	102.0	97.0
A	Sumner near Lamson, East Boston	82.1	81.2	82.2	74.5
14	Jeffries Point Yacht Club, East Boston	85.3	82.3	85.3	77.3
15	Admiral's Hill, Chelsea	101.1	96.4	101.1	96.4
16	Bradstreet Avenue & Sales, Revere	102.5	97.7	102.5	97.7
17	Carey Circle, Revere	89.6	87.1	89.6	87.1
23	Myrtlebank/Hilltop, Dorchester	79.7	79.7	79.7	79.7
24	Cunningham Park, Milton	75.8	75.8	75.8	75.8
25	Squaw Rock Park, Quincy	78.7	73.5	78.7	73.5
26	Hull High School, Hull	85.0	81.0	87.4	83.7
E	Farragut @ 2nd, South Boston	94.5	91.9	94.5	83.9

Table 6.2-14
Calculated Time-Above-Threshold Values for a 24-hour Period of Flight Operations for the No Action and Preferred Alternatives - 29M Low Fleet Scenario (in minutes per day)

dentity		No Action Alternative					Preferred Alternative					Change (Preferred Alternative – No Action Alternative)				
Number	Location	95 dB	85 dB	75 dB	65 dB	55 dB	95 dB	85 dB	75 dB	65 dB	55 dB	95 dB	85 dB	75 dB	65 dB	55 dB
1	Andrews St, South End	0	0	1	8	42	0	0	3	23	80			+2	+15	+38
2	B & Bolton, South Boston	0	1	4	16	68	0	1	12	41	110			+8	+25	+42
3	South Boston Yacht Club, South Boston	0	0	9	70	235	0	0	3	34	158			-6	-36	-77
4	Bayview & Grandview, Winthrop	2	17	51	119	273	1	10	28	74	212	-1	-7	-23	-45	-61
5	Harborview & Faun Bar, Winthrop	0	3	26	91	237	0	1	13	54	171		-2	-13	-37	-66
6	Somerset & Johnson, Winthrop	0	0	10	95	376	0	0	12	102	408			+2	+7	+32
7	Loring Road near Court Road, Winthrop	1	11	51	200	557	0	8	39	146	449	-1	-3	-12	-54	-108
8	Morton & Amelia, Winthrop	0	1	11	63	265	0	1	9	49	202			-2	-14	-63
9	Bayswater & Nancia, East Boston	0	5	28	99	254	0	4	20	72	220		-1	-8	-27	-34
10	Bayswater & Shawsheen, East Boston	0	1	12	66	197	0	1	10	56	196			-2	-10	-1
11	Don Orione, East Boston	0	0	4	39	155	0	0	3	31	142			-1	-8	-13
12	East Boston Yacht Club, East Boston	0	3	33	191	500	0	2	25	149	412		-1	-8	-42	-88
13	East Boston High School, East Boston	0	0	3	19	95	0	1	10	40	141		+1	+7	+21	+46
A	Sumner near Lamson, East Boston	0	0	2	32	222	0	0	2	42	235				+10	+13
14	Jeffries Point Yacht Club, East Boston	0	0	4	50	287	0	0	4	60	284				+10	-3
15	Admiral's Hill, Chelsea	0	0	3	13	60	0	1	7	28	92		+1	+4	+15	+32
16	Bradstreet Avenue & Sales, Revere	0	3	17	45	120	0	2	12	33	93		-1	-5	-12	-27
17	Carey Circle, Revere	0	0	3	24	64	0	0	3	17	45				-7	-19
23	Myrtlebank/Hilltop, Dorchester	0	0	0	9	76	0	0	0	4	36				-5	-40
24	Cunningham Park, Milton	0	0	0	10	59	0	0	0	5	28				-5	-31
25	Squaw Rock Park, Quincy	0	0	0	1	36	0	0	0	1	24					-12
26	Hull High School, Hull	0	0	0	9	55	0	0	0	15	79				+6	+24
E	Farragut @ 2nd, South Boston	0	0	8	71	275	0	0	3	45	204			-5	-26	-71

Table 6.2-15
Calculated Time-Above-Threshold Values for Nighttime Flight Operations (10:00 PM to 7:00 AM) for the No Action and Preferred Alternatives- 29M Low Fleet Scenario (in minutes per day)

Identity Number	Location	No Action Alternative 95 dB	85 dB	75 dB	65 dB	55 dB	Preferred Alternative 95 dB	85 dB	75 dB	65 dB	55 dB	Change in Minutes No Action – Preferred)) 95 dB	85 dB	75 dB	65 dB	55 dB
1	Andrews St, South End	0	0	0	2	6	0	0	0	1	4				-1	-2
2	B & Bolton, South Boston	0	0	1	3	9	0	0	0	2	6			-1	-1	-3
3	South Boston Yacht Club, South Boston	0	0	1	7	25	0	0	1	7	24					-1
4	Bayview & Grandview, Winthrop	0	1	4	12	35	0	2	4	12	34		+1			-1
5	Harborview & Faun Bar, Winthrop	0	0	3	9	27	0	0	2	9	27			-1		
6	Somerset & Johnson, Winthrop	0	0	2	16	50	0	0	2	15	46				-1	-4
7	Loring Road near Court Road, Winthrop	0	1	6	21	57	0	2	10	29	69		+1	+4	+8	+12
8	Morton & Amelia, Winthrop	0	0	1	8	30	0	0	1	9	31				+1	+1
9	Bayswater & Nancia, East Boston	0	1	3	10	30	0	1	3	11	30				+1	
10	Bayswater & Shawsheen, East Boston	0	0	1	9	31	0	0	2	11	36			+1	+2	+5
11	Don Orione, East Boston	0	0	0	4	22	0	0	1	5	26			+1	+1	+4
12	East Boston Yacht Club, East Boston	0	0	6	25	59	0	1	6	30	69		+1		+5	+10
13	East Boston High School, East Boston	0	0	2	6	19	0	0	1	5	17			-1	-1	-2
A	Sumner near Lamson, East Boston	0	0	1	9	37	0	0	1	8	35				-1	-2
14	Jeffries Point Yacht Club, East Boston	0	0	1	11	41	0	0	1	10	38				-1	-3
15	Admiral's Hill, Chelsea	0	0	1	4	13	0	0	1	3	11				-1	-2
16	Bradstreet Avenue & Sales, Revere	0	1	2	5	14	0	1	2	5	15					+1
17	Carey Circle, Revere	0	0	1	3	7	0	0	1	3	7					
23	Myrtlebank/Hilltop, Dorchester	0	0	0	1	7	0	0	0	1	7					
24	Cunningham Park, Milton	0	0	0	1	6	0	0	0	1	6					
25	Squaw Rock Park, Quincy	0	0	0	0	5	0	0	0	0	5					
26	Hull High School, Hull	0	0	0	2	12	0	0	0	2	12					
E	Farragut @ 2nd, South Boston	0	0	0	7	28	0	0	0	7	27					-1

6.2.6 Ground Taxi Noise Levels

Aircraft ground taxi noise was assessed in the Airside Project Draft EIS/Final EIR at seven noise monitoring stations (NMS) in the immediate vicinity of the airport. The analysis looked at five metrics, and a summary of those analyses is provided in this Supplemental DEIS/FEIR.

- Day-Night Sound Level (DNL)
- Night (10:00 PM to 7:00 AM) Equivalent Sound Level (LeqN)
- Maximum Sound Level (Lmax)
- Night Time-Above 55, 65, 75, 85, and 95 dB (TAN)
- 24-hour Day Time-Above 55, 65, 75, 85, and 95 dB (TA24)

Ground noise was calculated for Alternatives 1, 2, 3 and 4. The ground noise for Alternatives 1 and 1A will be similar for fleets where the effective runway utilization is the same for both Alternatives. The effective runway utilization data for arrivals (Table 6.2-3 in the Airside Project Draft EIS/EIR) and departures (Table 6.2-4 in the Airside Project Draft EIS/EIR) indicates little difference between Alternatives 1 and 1A for the 29M Low and High Fleet scenarios, and the 37.5M Low Fleet scenario. Therefore, the results of the Alternative 1 ground noise analysis for these fleets also apply to the Preferred Alternative.

The noise from ground taxi operations is significantly less than the noise from in-flight operations, which includes the noise from both takeoff ground roll and application of thrust reverser on landing. For example, the in-flight DNL for average propagation in South Boston at Farragut and 2nd (Location E) is 40 to 44 dB greater than that of ground taxi noise, and for maximum propagation it is 23 to 27 dB greater. At the other six locations, the in-flight DNL for average propagation is 17 to 30 dB greater than that of the ground taxi noise, and for maximum propagation is 2 to 13 dB greater.

Implementation of the Preferred Alternative would produce a modest reduction in ground taxi noise for the Bayswater section of East Boston and Winthrop (NMS #7, 10 and 12), located to the northeast of the airport, particularly as operations increase and greater congestion occurs on the existing taxiway. These are the locations most affected by ground taxi noise, and their average reductions in DNL range from 1.9 to 3.3 dB. (See Table 6.2-16) There are smaller reductions at Somerset and Johnson (NMS # 6) in Winthrop (0.8 to 1.0 dB) and at the two positions (Location A and NMS #14) in Jeffries Point (0.1 to 0.3 dB). There is a small increase for average propagation (0.8 dB) and a decrease for maximum propagation (1.6 dB) at Farragut and 2nd (Location E). However, at this location in South Boston, the ground taxi operations would often be inaudible.

Table 6.2-16
Change in DNL Values from Ground Operations, by Noise Monitoring Site (Preferred Alt. 1A – No Action Alt.4, in dB)

Fleet	Loring/ Court Road Winthrop (NMS #7)	Bayswater and Shawsheen, East Boston (NMS #10)	East Boston Yacht Club, East Boston (NMS #12)	Somerset and Johnson, Winthrop (NMS #6)	Sumner/ Lamson, East Boston (NMS #A)	Jeffries Point Yacht Club, East Boston (NMS #14)	Farragut @ 2nd S. Boston (NMS #E)
Average Propagation Conditions							
29M Low	-0.2	-0.8	-1.0	-0.8	0.4	0.6	1.4
37.5M Low	-4.6	-5.0	-3.2	-0.6	-0.6	-0.7	0.7
37.5M High	-4.7	-1.5	-1.4	-1.5	-0.3	-0.3	0.2
Average Change dB	-3.2	-2.4	-1.9	-1.0	-0.2	-0.1	0.8
Maximum Propagation Conditions							
29M Low	-0.6	-1	-1.2	-0.8	0.2	0.6	-1.1
37.5M Low	-4.7	-5	-3.4	-0.3	-0.8	-1.0	-1.6
37.5M High	-4.6	-1.3	-1.2	-1.3	-0.3	-0.3	-2.1
Average Change dB	-3.3	-2.4	-1.9	-0.8	-0.3	-0.2	-1.6

6.2.6.1 Other Ground Taxi Noise Levels

Ground taxi noise was also calculated for four other noise metrics: Nighttime Equivalent Sound Level (LeqN), Maximum Sound Level (Lmax), Night Time-Above a Noise Threshold (TAN), and 24-hour Day Time-Above a Noise Threshold (TA24). Tables for all locations and all fleet scenarios are contained in Appendix L of the Airside Project Draft EIS/EIR.

The Nighttime Equivalent Sound Level (LeqN) calculated for ground taxi operations are about 7 to 10 dB lower than the DNL values because there are fewer operations per hour in the nighttime period and the 10 dB penalty for nighttime operations in the DNL metric is not applied to LeqN. For all future scenarios, the Preferred Alternative results in an average reduction of 0.5 to 0.6 dB in LeqN when compared to the No Action Alternative. The Maximum A-weighted Sound Levels (Lmax) calculated for the ground taxi operations are identical at 59 dB for average propagation and 75 dB for maximum propagation. This means that for almost all of the cases, the same aircraft type and operation at the same location produced the recorded Lmax value.

Tables 6.2-17 and 6.2-18 present the time-above threshold values in minutes for ground taxi noise at NMS # 12 for nighttime and 24-hour day, respectively. Data are presented for three thresholds, 55, 65, and 75 dB. Note that total time-above 75 dB values less than 0.5 minute are rounded down to 0 minutes. The nighttime values of TA in Table 6.2-17 are much smaller than those in Table 6.2-18 for a 24-hour day, and are roughly in proportion to their respective numbers of operations.

The reductions in 24-hour time-above at the East Boston Yacht Club (NMS#12) for the Preferred Alternative are relatively dramatic. The average decrease in TA24 for maximum

propagation is 43 percent for TA24 55 dB and 55 percent for TA24 65 dB. At Loring Road near Court Road, Winthrop (NMS # 7) the corresponding decreases are 65 and 54 percent for TA24 55 and 65 dB, respectively, and at Bayswater and Shawsheen, East Boston (NMS #10) the decreases for TA24 55 and 65 dB are 53 and 27 percent, respectively. These differences in TA24 for the Preferred Alternative are of the same nature as those found above in reviewing the DNL metric at these locations.

Table 6.2-17
Comparison of Time-Above Nighttime Threshold Values in Minutes Per Day from Ground Operations at NMS #12: East Boston Yacht Club, East Boston

	No Action (Alternative 4)			Preferred Alternative			Comparing the Preferred and No Action Alts.		
Fleet	75 dB	65 dB	55 dB	75 dB	65 dB	55 dB	75 dB	65 dB	55 dB
Average Propagation Conditions									
29M Low	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0
37.5M High	0.0	0.0	1.0	0.0	0.0	3.0	0.0	0.0	+2.0
Maximum Propagation Conditions									
29M Low	0.0	4.0	67.0	0.0	5.0	69.0	0.0	+1.0	+2.0
37.5M High	0.0	11.0	127.0	0.0	10.0	111.0	0.0	13.0	+16.0

Table 6.2-18
Comparison of Time-Above 24-hour Threshold Values in Minutes Per Day from Ground Operations at NMS #12: East Boston Yacht Club, East Boston

	No Action (Alternative 4)			Preferred Alternative			Comparing the Preferred and No Action Alts.		
Fleet	75 dB	65 dB	55 dB	75 dB	65 dB	55 dB	75 dB	65 dB	55 dB
Average Propagation Conditions									
29M Low	0.0	0.0	21.0	0.0	0.0	14.0	0.0	0.0	-7.0
37.5M High	0.0	0.0	8.0	0.0	0.0	10.0	0.0	0.0	+2.0
Maximum Propagation Conditions									
29M Low	0.0	146.0	1112.0	0.0	67.0	727.0	0.0	-79.0	-385.0
37.5M High	0.0	108.0	1168.0	0.0	47.0	569.0	0.0	-61.0	-599.0

6.2.7 37.5M High Regional Jet Fleet

6.2.7.1 Fleet Mix and Operations

A summary of operations under each of the five project alternatives considered is provided in Table 6.2-19 . Daytime and nighttime operations for jets, turboprops and total aircraft

and are compared to 1998 actual operations. Activity is comprised of scheduled and unscheduled operations by major air carriers, commuter airlines, and air cargo operators; it also includes general aviation jet and turboprop aircraft.

Alternatives that incorporate peak period pricing (Alternatives 1, 2, and 3) have fewer operations than the No Action and Preferred Alternative, but the differences in activity levels are small, and have a negligible effect on noise exposure since most cancelled operations are smaller, quieter aircraft. The most significant factor affecting the noise impacts of different alternatives is the amount of delay that occurs when accommodating the scheduled flights:

- As delays increase, more operations slip into nighttime hours, causing greater disturbance and an increase in those measures of noise (DNL, LeqN, and TAN) that are sensitive to late night activity; and
- High delays limit controller flexibility and make it difficult to achieve PRAS goals.

Alternatives incorporating Runway 14/32 (Alternative 1 and the Preferred Alternative 1A) significantly reduce nighttime operations by reducing delays. Thus, the Preferred Alternative results in approximately 37 fewer nighttime operations (a reduction of nearly 13 percent compared to the No Action Alternative); 32 of those are in jet aircraft. Alternative 1 results in some cancellations and reduces the delays even further, causing the number of nighttime operations to decrease by 57 compared to the No Action Alternative; 48 of those are in jet aircraft.

A second factor affecting the noise impacts of the 37.5M High RJ Fleet is the noise of the individual aircraft themselves. Though the mix of aircraft types varies, the primary difference between the 37.5M High RJ Fleet and previous forecasts is the higher number of 30- to 70-seat regional jet aircraft that are entering the fleet and replacing many of the existing and previously forecast turboprop operations. For example, in the 37.5M High Fleet, only about 26 of the 1,665 daily operations were by regional jets while 637 operations were by turboprops; in the 37.5M High RJ scenario, regional jets account for 395 operations of 1,601 daily operations while turboprops account for only 217.

Table 6.2-19
Average Daily Operations for 37.5M High RJ Fleet (All Alternatives)

Fleet Forecast	Stage 2 Jets Day/Night	Stage 3 Jets Day/Night	Turboprops Day/Night	Totals Day	Totals Night	Totals Daily
37.5M High RJ Fleet						
No Action (Alt. 4)	0/0	1,125/259	188/29	1,313	288	1,601
Preferred (Alt.1A)	0/0	1,157/227	193/24	1,350	251	1,601
All Actions (Alt. 1)	0/0	1,143/211	179/21	1,322	231	1,553
No 14/32 (Alts. 2/3)	0/0	1,117/236	175/25	1,292	261	1,553

Note: "Day" defined as 7:00 AM to 10:00 PM and "Night" defined as 10:00 PM to 7:00 AM, consistent with the definitions as used in DNL calculations.

This shift to a higher proportion of regional jet operations does not imply increased noise. A 50-seat Embraer 145 regional jet is actually 5 to 10 decibels quieter, both on takeoff and on landing, than even some of the most recently manufactured Stage 3 jet aircraft, and though it is louder than some turboprops, it is quieter than many other turboprop types currently operating at Logan Airport. Thus, the increased presence of regional jets is more likely to impact noise exposure through runway use and delay impacts rather than through the fleet mix difference itself. The impacts of these fleet changes on the noise environment will be described in more detail later in this section.

6.2.7.2 Flight Tracks and Runway Use

Flight tracks for the new 37.5M High RJ Fleet scenario were assumed to be identical to the tracks modeled under other fleets as shown earlier in Figure 6.2-1 through Figure 6.2-4. The figures indicate arrivals to Runway 32 converge and descend to the runway over Boston Harbor while departures from Runway 14 climb out in the opposite direction over the harbor.

Summaries of runway use for this 37.5M High RJ Fleet are presented in Section 4.7. Each of these tables allows a comparison of the number of operations expected to overfly a given community for each of the study alternatives.

6.2.7.3 INM Modeled In-Flight Noise Levels

Consistent with other fleet forecasts in this Airside Improvements Planning Project, the 37.5M High RJ Fleet further illustrates that with a growing number of operations, the No Action Alternative will result in increased use of Runways 4L/R, 22R, and 27 for arrivals and Runways 22L/R, 4L/R, and 9 for departures. These increases are anticipated despite the fact that current runway usages exceed PRAS goals and indicate a need to shift traffic to other runways. Controllers continue to need these north/south runway combinations because they have the highest capacity of any configurations available and that capacity is needed more frequently as demand increases. Noise exposure off these runway ends can therefore be expected to increase as well under the No Action Alternative.

Similar to the conclusions drawn from other fleet forecasts, with implementation of the Preferred Alternative under the 37.5M High RJ Fleet, air traffic controllers would have use of two or three runways during northwest winds (instead of the current one or two), and have greater flexibility and opportunity to achieve PRAS goals for both long-term annual runway use and short-term dwell and persistence relief. This benefits the communities presently experiencing the most aircraft noise.

Noise contours generated by the INM for all of the 37.5M High RJ Fleet Alternatives (4, 1A, 1, and 2/3) are shown in Figures 6.2-10 through 6.2-14. The exposure attributable to each Alternative is depicted by the 60, 65, and 70 dB DNL contours. The No Action Alternative is presented first to establish a basis for comparison; it is followed by the Preferred Alternative and then a comparison of the key 65 dB DNL contours for the Preferred and No Action Alternatives to show differences in the areas of significant noise impact. The final two figures present contours for the other Alternatives. Alternatives 2 and 3 have identical in-flight noise exposure since they differ only in that Alternative 2 includes the taxiway improvements. They are therefore portrayed by the same set of contours and population results.

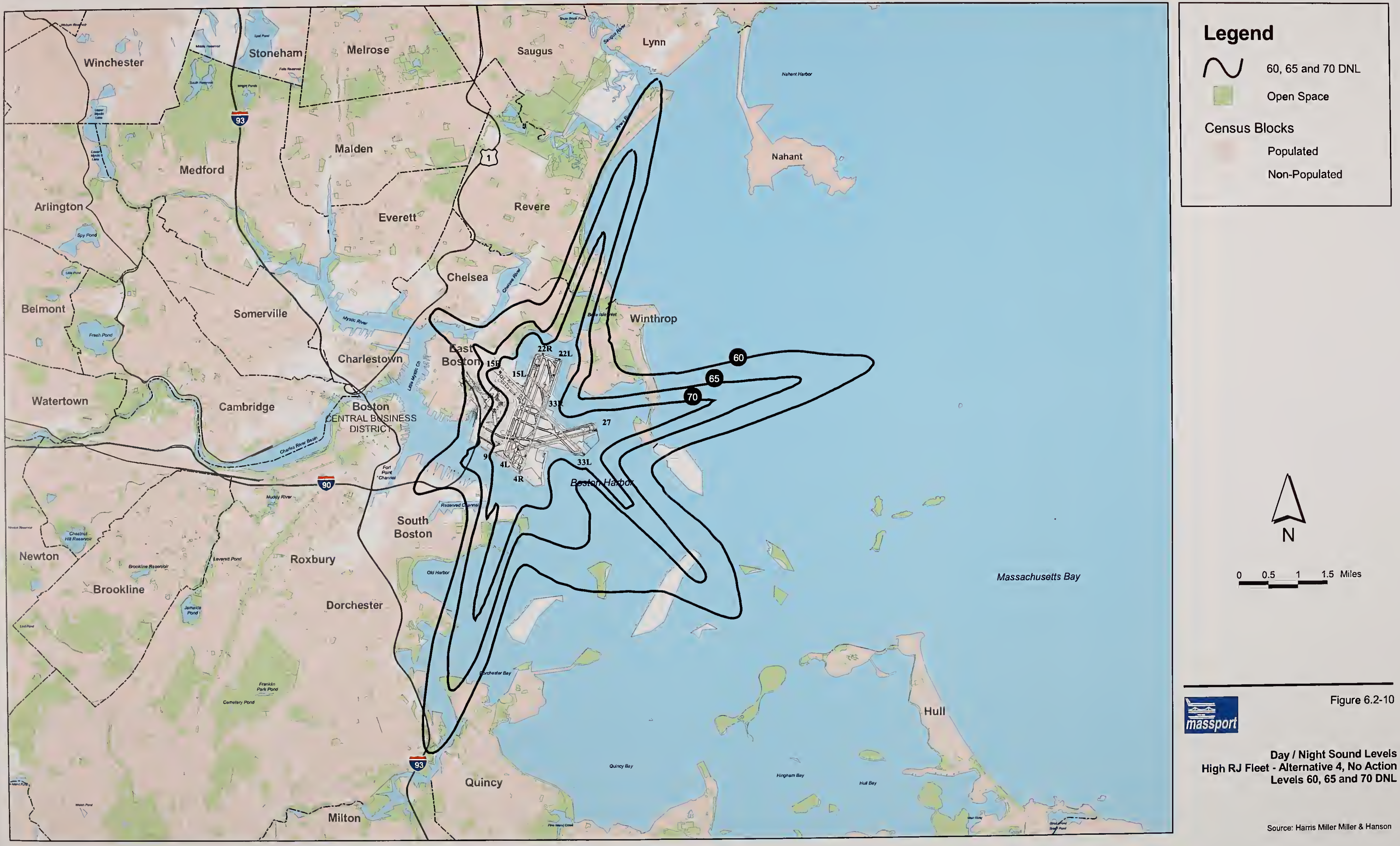


Figure 6.2-10

Day / Night Sound Levels
High RJ Fleet - Alternative 4, No Action
Levels 60, 65 and 70 DNL

Source: Harris Miller Miller & Hanson

Legend
60, 65 and 70 DNL
Open Space
Census Blocks
Populated
Non-Populated

N

0 0.5 1 1.5 Miles

massport

Figure 6.2-11

High RJ Fleet - Preferred Alternative Levels 60, 65 and 70 DNL

Source: Harris Miller Miller & Hanson

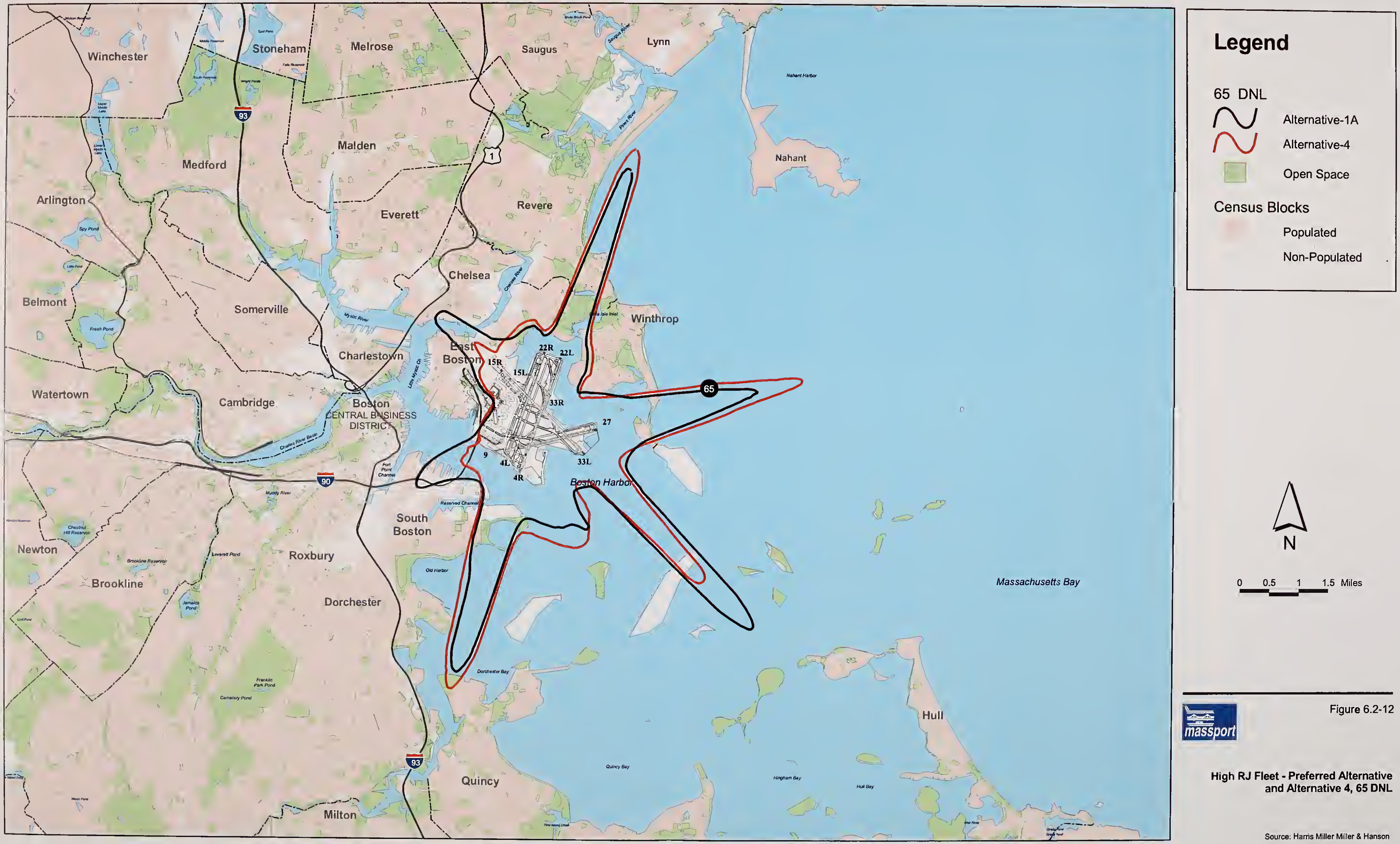


Figure 6.2-12

High RJ Fleet - Preferred Alternative and Alternative 4, 65 DNL

Source: Harris Miller Miller & Hanson

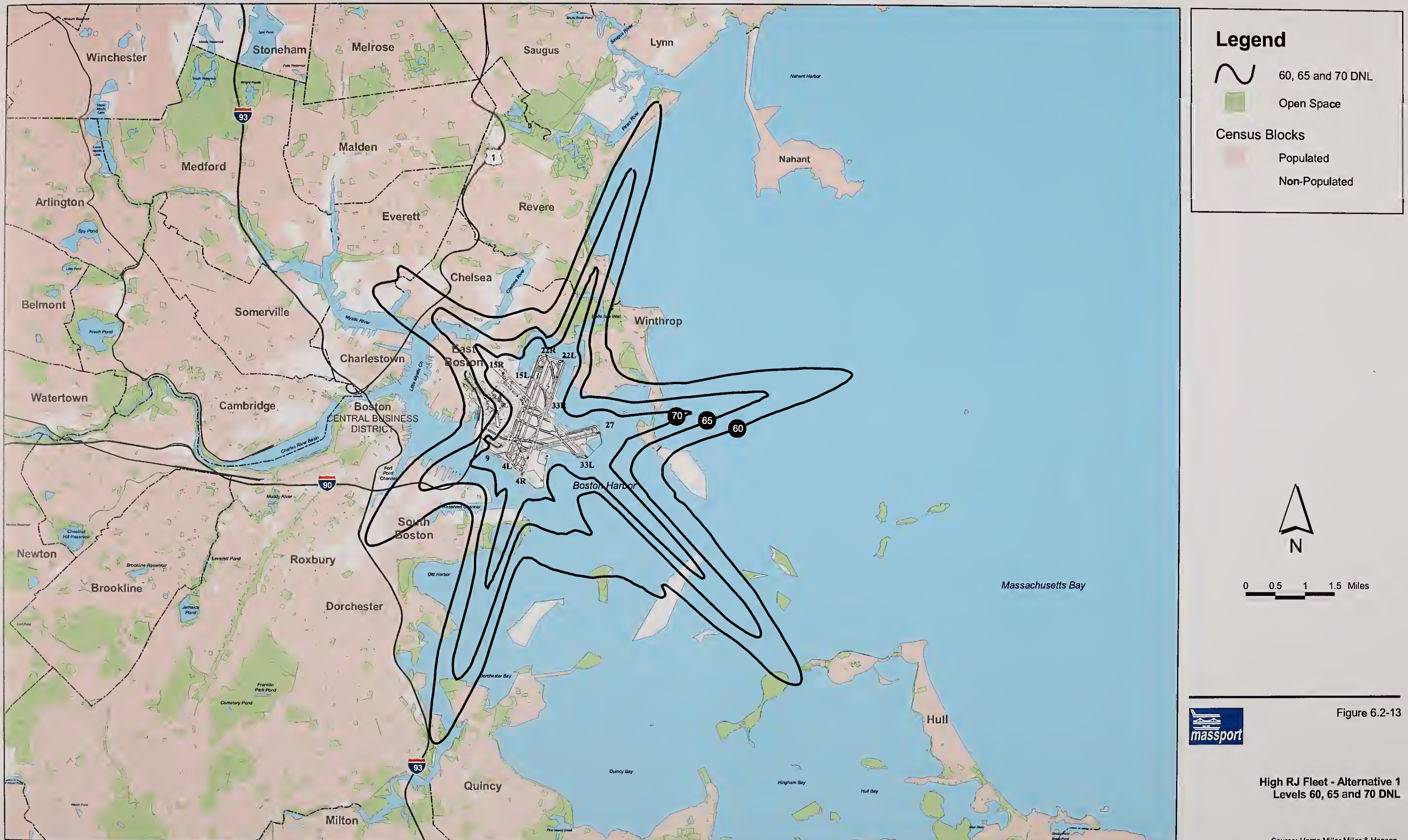


Figure 6.2-13

High RJ Fleet - Alternative 1
Levels 60, 65 and 70 DNL

Source: Harris Miller Miller & Hanson

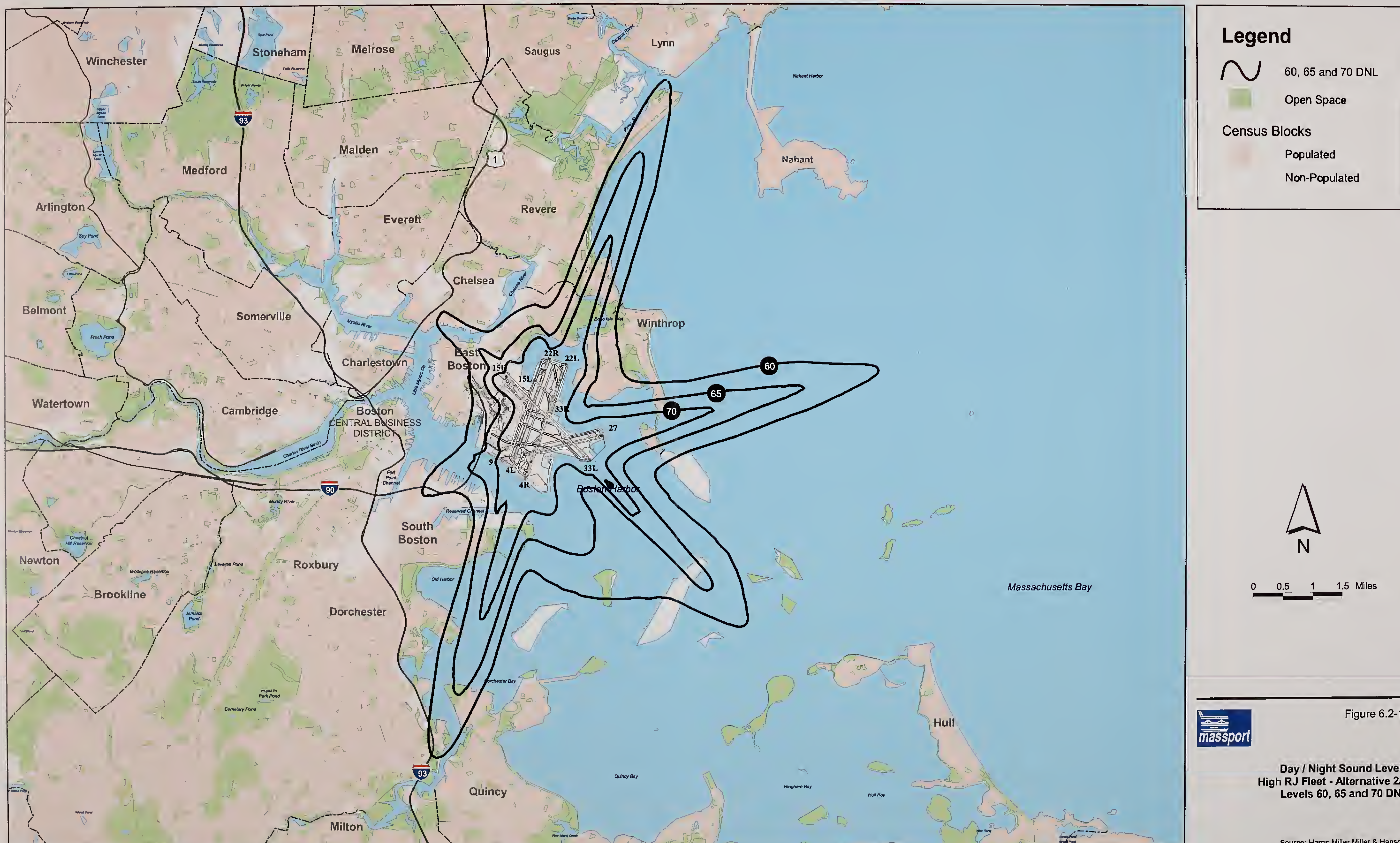


Figure 6.2-14

massport

Day / Night Sound Levels
High RJ Fleet - Alternative 2/3
Levels 60, 65 and 70 DNL

Source: Harris Miller Miller & Hanson

6.2.7.4 Differences in Noise Exposure for Alternatives 4, 1A, 1, and 2/3 Under the 37.5M High RJ Fleet

Figure 6.2-10 shows the DNL contours for the No Action Alternative (Alternative 4) and indicates a continuing dependence on the north/south runway combinations. The 65 dB DNL contour for this scenario extends as further north along the Revere shoreline and south to Squantum than any Alternative. It is also the largest of the Alternatives over most of Winthrop. Conversely, to the west it remains close to the Airport off of Runway 27, never extending beyond the Inner Harbor, and stays close to the end of Runway 33L, extending to about Chelsea Street in East Boston.

The Preferred Alternative with its addition of unidirectional Runway 14/32 in Figure 6.2-11, shifts this balance by reducing coverage of the 65 dB DNL contour in Revere, Winthrop and South Boston near City Point. This shift in runway use results in increased exposure above 65 dB, primarily in commercial areas of South Boston near the World Trade Center, to the northwest in the Eagle Hill area of East Boston, and beyond to approximately Broadway in Chelsea.

A comparison of the No Action and Preferred Alternatives in Figure 6.2-12 indicates a 1 to 2 dB DNL decrease in exposure attributable to the Preferred Alternative in parts of Revere and Winthrop that receive exposure levels in excess of 70 dB DNL. These improvements are achieved through the greater flexibility afforded by the additional runway, permitting air traffic controllers to reduce the activity on the north/south runway combinations and shift operations so that arrivals increase to Runways 33L and 32, largely over Boston Harbor, or so that departures increase on Runways 27 and 33L. This causes increased noise on the order of 4 to 5 dB off of those runway ends, but at levels below those experienced in Winthrop and Revere.

Figure 6.2-13 depicts contours for Alternative 1. This scenario presumes construction of unidirectional Runway 14/32 but also includes the effects of peak period pricing. The differences compared to the Preferred Alternative are relatively small, causing both increases as well as decreases in exposure, generally less than a decibel in magnitude. Small additional benefits from peak period pricing occur in Revere and Winthrop at contour levels above 70 dB DNL, while areas of South Boston off the approach end of 22R also receive small improvements compared to the Preferred Alternative but at lower DNL levels of 65 to 70 dB. Negligible differences between the two scenarios occur in other areas of South Boston affected by departures from Runway 27, but small increase in exposure occurs to the northwest off of Runway 33L causing increased exposure in parts of East Boston and Chelsea.

The contours for Alternatives 2 and 3 are shown in Figure 6.2-14. Except for a small improvement in Winthrop and a small reduction in noise in South Boston near the approach end of Runway 22L, the contours generally differ very little from the No Action Alternative.

6.2.7.6 Population Affected by Noise

Estimates of the number of people residing within 5 dB increments of noise exposure for each of the alternatives examined under the 37.5M High RJ Fleet are summarized in Table 6.2-20. Also included are the 1998 populations for reference. Table 6.2-21, which follows, summarizes a comparison of the Preferred Alternative with No Action and indicates the improvement that occurs at the highest exposure levels as a result of the increased flexibility afforded by Runway 14/32.

Table 6.2-20
Summary of Noise-Exposed Population for All Alternatives – 37.5M High RJ Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action Alternative (Alt. 4)	Preferred Alternative (Alt. 1A)	With Peak PeriodPricing (Alt. 1)	Other Improvements (Alts.2/3)
High Regional Jet Fleet					
DNL 75 dB and above	577	222	58	58	135
DNL 70 dB and above	2,679	3,700	2,267	2,020	3,584
DNL 65 dB and above	23,296	11,493	11,857	12,470	11,223
DNL 60 dB and above	93,860	36,857	50,048	48,332	36,024

1 Except for 1998, all estimates are based on runway use chosen to most nearly achieve PRAS goals and reflect the effects of delayed aircraft as determined by the DELAYSIM model.

Table 6.2-21
Comparison of Noise-Exposed Population for the No Action and Preferred Alternatives – 37.5M High RJ Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action Alternative (Alt. 4)	Preferred Alternative (Alt. 1A)	Preferred Alt. Compared to No Action	Percent Change from No Action to Preferred Alt
High Regional Jet Fleet					
DNL 75 dB and above	577	222	58	-164	-74%
DNL 70 dB and above	2,679	3,700	2,267	-1,433	-39%
DNL 65 dB and above	23,296	11,493	11,857	364	3%
DNL 60 dB and above	93,860	36,857	50,048	13,191	36%

1 Except for 1998, all estimates are based on runway use chosen to most nearly achieve PRAS goals and reflect the effects of delayed aircraft as determined by the DELAYSIM model.

Comparing these figures for the No Action and Preferred Alternatives, the Preferred Alternative again provides important reductions in population exposure to DNL values greater than or equal to 70 and 75 dB with a minimal increase in numbers of people exposed above 65 dB DNL. Only at exposure levels between 60 and 65 dB DNL is there a significant increase in population exposed to noise from the Preferred Alternative.

These reductions are a direct result of the implementation of Runway 14/32, which enables the Air Traffic Control Tower to better achieve PRAS goals which were specifically designed to give relief to the populations experiencing the most aircraft noise.

The results in the previous two tables are broken down by community area in Tables 6.2-22 and 6.2-23 below. Similar tables for the other fleets are in Appendix L of the Airside Project Draft EIS/EIR.

6.2.7.7 Other Indications of Changed Exposure Using the 37.5M High RJ Fleet

As discussed in Section 6.2.5, five other metrics were computed at specific points to identify changes in aircraft noise. The selected points coincide with 21 of Massport's permanent noise monitoring locations along with two additional sites selected for the Airside Project.

The calculations of DNL for the No Action and Preferred Alternatives under the 37.5M High RJ Fleet are presented and compared in Table 6.2-24. Results for the other alternatives under the High RJ Fleet are presented in Appendix E of this document. Similar tables for all other study fleets are contained in Appendix L of the Airside Project Draft EIS/EIR.

Even under the No Action Alternative, the 37.5M High RJ noise is less than that in 1998 at the majority of locations around the airport, largely reflecting the air carriers' replacement of Stage 2 aircraft with quieter Stage 3 aircraft at the end of 1999 in compliance with Federal regulations.

Those sites that are shown to increase above 1998 levels under the No Action Alternative are limited to six locations (9, 16 and 17 to the north in East Boston and Revere, and 3, 23, and 24 to the south in South Boston, Dorchester, and Milton. As shown in Figure 5.2-4 in Chapter 5, all of them are directly aligned with Runways 4L/R and 22L/R and reflect the increased need to use those runways ever more frequently as demand increases. This result is further illustrated graphically by comparing the 1998 DNL noise contours of Figure 5.2-3 with the DNL contours for the 37.5M High RJ No Action Alternative shown in Figure 6.2-10.

Comparing the Preferred and No Action Alternatives in the table above, it is notable that the same six locations just mentioned are expected to experience decreases in DNL of 1.4 to 1.8 dB if the Preferred Alternative is implemented. In addition, significant decreases of 1.5 to 2.4 dB are seen at sites 9 and 12 on Bayswater Street and at the yacht club in East Boston and at sites 4 and 7 in Winthrop, which along with site 16 in Revere, are now or will be exposed to DNL levels above 70 dB – the highest of any locations in the vicinity of the Airport – if no action is taken.

Table 6.2-22
Noise-Exposed Population by Town or Neighborhood Area for All Alternatives – 37.5M High RJ Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action (Alternative 4)	Preferred (Alternative 1A)	With Peak Period Pricing (Alternative 1)	Other Improvements (Alternatives 2/3)
Chelsea					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	0	0	0	0	0
DNL 65 dB and above	0	0	392	1,084	0
DNL 60 dB and above	9,222	1,601	8,117	8,488	1,547
Everett					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	0	0	0	0	0
DNL 65 dB and above	0	0	0	0	0
DNL 60 dB and above	0	0	0	0	0
E. Boston – Eagle Hill					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	0	0	0	1	0
DNL 65 dB and above	2,280	120	3,133	3,160	113
DNL 60 dB and above	19,040	3,956	11,247	11,479	3,393
E. Boston – Orient Hts/ Bayswater St.					
DNL 75 dB and above	58	58	58	58	58
DNL 70 dB and above	239	355	239	239	355
DNL 65 dB and above	1,742	1,135	606	606	1,170
DNL 60 dB and above	5,128	4,213	3,287	3,069	4,213
Other East Boston					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	351	0	0	0	0
DNL 65 dB and above	3,940	986	649	918	986
DNL 60 dB and above	6,228	3,940	4,091	4,144	3,940
Total East Boston(1)					
DNL 75 dB and above	58	58	58	58	58
DNL 70 dB and above	590	355	239	240	355
DNL 65 dB and above	7,962	2,241	4,388	4,684	2,269
DNL 60 dB and above	30,396	12,109	18,625	18,692	11,546
Long Island					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	0	0	0	0	0
DNL 65 dB and above	0	0	0	0	0
DNL 60 dB and above	502	0	0	0	0

Table 6.2-22 (cont.)
Noise-Exposed Population by Town or Neighborhood Area for All Alternatives – 37.5M High RJ Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action (Alternative 4)[2]	Preferred (Alternative 1A)[2]	With Peak Period Pricing (Alternative 1)[2]	Other Improvements (Alternatives 2/3)[2]
Revere					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	0	2,260	1,389	1,205	2,304
DNL 65 dB and above	3,168	3,854	3,428	3,428	3,854
DNL 60 dB and above	5,300	7,901	6,052	5,808	8,472
South Boston					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	48	0	0	0	0
DNL 65 dB and above	3,553	1,080	765	429	872
DNL 60 dB and above	22,511	3,479	6,950	5,801	3,046
Boston (Other)[1]					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	0	0	0	0	0
DNL 65 dB and above	0	0	0	0	0
DNL 60 dB and above	10,809	674	482	429	625
Winthrop - Point Shirley					
DNL 75 dB and above	519	164	0	0	77
DNL 70 dB and above	1,266	697	417	353	537
DNL 65 dB and above	2,195	1,542	1,305	1,266	1,452
DNL 60 dB and above	4,080	2,527	2,291	2,195	2,401
Winthrop - Court Road					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	731	388	222	222	388
DNL 65 dB and above	3,387	1,661	1,128	1,128	1,661
DNL 60 dB and above	3,387	3,387	3,387	3,387	3,387
Rest of Winthrop					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	44	0	0	0	0
DNL 65 dB and above	3,031	1,115	451	451	1,115
DNL 60 dB and above	7,653	5,179	4,144	3,532	5,000
Total Winthrop					
DNL 75 dB and above	519	164	0	0	77
DNL 70 dB and above	2,041	1,085	639	575	925
DNL 65 dB and above	8,613	4,318	2,884	2,845	4,228
DNL 60 dB and above	15,120	11,093	9,822	9,114	10,788
Total Population Summary					
DNL 75 dB and above	577	222	58	58	135
DNL 70 dB and above	2,679	3,700	2,267	2,020	3,584
DNL 65 dB and above	23,296	11,493	11,857	12,470	11,223
DNL 60 dB and above	93,860	36,857	50,048	48,332	36,024

1 "Boston (Other)" includes Back Bay, Dorchester, Jamaica Plain, Roxbury, and the South End.

2 Except for 1998, all estimates are based on runway use chosen to most nearly achieve PRAS goals and reflect the effects of delayed aircraft as determined by the DELAYSIM model.

Table 6.2-23
Comparison of Noise-Exposed Population by Town or Neighborhood Area for No Action and Preferred Alternatives – 37.5M High RJ Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action (Alternative 4)	Preferred (Alternative 1A)	Preferred Alt. Compared to No Action	Percent Change from No Action to Preferred Alt.
Chelsea					
DNL 75 dB and above	0	0	0	0	0
DNL 70 dB and above	0	0	0	0	0
DNL 65 dB and above	0	0	392	392	N/A
DNL 60 dB and above	9,222	1,601	8,117	6,516	407%
Everett					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	0	0	0	0	0%
E. Boston – Eagle Hill					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	2,280	120	3,133	3,013	2511%
DNL 60 dB and above	19,040	3,956	11,247	7,291	184%
E. Boston – Orient Hts/ Bayswater St.					
DNL 75 dB and above	58	58	58	0	0%
DNL 70 dB and above	239	355	239	-116	-33%
DNL 65 dB and above	1,742	1,135	606	-529	-47%
DNL 60 dB and above	5,128	4,213	3,287	-926	-22%
Other East Boston					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	351	0	0	0	0%
DNL 65 dB and above	3,940	986	649	-337	-34%
DNL 60 dB and above	6,228	3,940	4,091	151	4%
Total East Boston[1]					
DNL 75 dB and above	58	58	58	0	0%
DNL 70 dB and above	590	355	239	-116	-33%
DNL 65 dB and above	7,962	2,241	4,388	2,147	96%
DNL 60 dB and above	30,396	12,109	18,625	6,516	54%
Long Island					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	502	0	0	0	0%

Table 6.2-23 (cont.)
Comparison of Noise-Exposed Population by Town or Neighborhood Area for No Action and Preferred Alternatives – 37.5M High RJ Fleet Scenario

Day-Night Sound Level in dB	1998 Actual	No Action (Alternative 4) [2]	Preferred (Alternative 1A) [2]	Preferred Alt. Compared to No Action [2]	Percent Change from No Action to Preferred Alt. [2]
Revere					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	2,260	1,389	-871	-39%
DNL 65 dB and above	3,168	3,854	3,428	-426	-11%
DNL 60 dB and above	5,300	7,901	6,052	-1,849	-23%
South Boston					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	48	0	0	0	0%
DNL 65 dB and above	3,553	1,080	765	-315	-29%
DNL 60 dB and above	22,511	3,479	6,950	3,471	100%
Boston (Other)[1]					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	0	0	0	0	0%
DNL 65 dB and above	0	0	0	0	0%
DNL 60 dB and above	10,809	674	482	-192	-28%
Winthrop - Point Shirley					
DNL 75 dB and above	519	164	0	-164	-100%
DNL 70 dB and above	1,266	697	417	-280	-40%
DNL 65 dB and above	2,195	1,542	1,305	-237	-15%
DNL 60 dB and above	4,080	2,527	2,291	-236	-9%
Winthrop - Court Road					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	731	388	222	-166	-43%
DNL 65 dB and above	3,387	1,661	1,128	-533	-32%
DNL 60 dB and above	3,387	3,387	3,387	0	0%
Rest of Winthrop					
DNL 75 dB and above	0	0	0	0	0%
DNL 70 dB and above	44	0	0	0	0%
DNL 65 dB and above	3,031	1,115	451	-664	-60%
DNL 60 dB and above	7,653	5,179	4,144	-1,035	-20%
Total Winthrop					
DNL 75 dB and above	519	164	0	-164	-100%
DNL 70 dB and above	2,041	1,085	639	-446	-41%
DNL 65 dB and above	8,613	4,318	2,884	-1,434	-33%
DNL 60 dB and above	15,120	11,093	9,822	-1,271	-11%
Total Population Summary					
DNL 75 dB and above	577	222	58	-164	-74%
DNL 70 dB and above	2,679	3,700	2,267	-1,433	-39%
DNL 65 dB and above	23,296	11,493	11,857	364	3%
DNL 60 dB and above	93,860	36,857	50,048	13,191	36%

1 "Boston (Other)" includes Back Bay, Dorchester, Jamaica Plain, Roxbury, and the South End.
2 Except for 1998, all estimates are based on runway use chosen to most nearly achieve PRAS goals and reflect the effects of delayed aircraft as determined by the DELAYSIM model.

Table 6.2-24
Comparison of INM-Computed Day-Night Sound Levels at Specific Points for 1998 and for the No Action and Preferred Alternatives – 37.5M High RJ Fleet

Noise Monitor	Location	1998 Existing Fleet	No Action (Alternative 4)	Preferred Alternative (Alternative 1A)	Change in dB No Action to Preferred
1	Andrews Street, South End	58.7	51.5	56.0	4.5
2	B & Bolton, South Boston	66.7	58.1	63.0	4.9
3	South Boston Yacht Club, South Boston	64.5	68.4	66.6	-1.8
4	Bayview & Grandview, Winthrop	79.4	75.9	73.9	-2.0
5	Harborview & Faun Bar, Winthrop	71.4	68.1	66.6	-1.5
6	Somerset & Johnson, Winthrop	68.2	64.7	64.7	0.0
7	Loring Road Near Court Road, Winthrop	76.1	75.9	73.5	-2.4
8	Morton & Amelia, Winthrop	67.5	66.0	64.7	-1.3
9	Bayswater & Nancia, East Boston	72.4	73.0	71.5	-1.5
10	Bayswater & Shawsheen, East Boston	66.3	65.6	64.3	-1.3
11	Don Orione, East Boston	62.2	60.4	59.3	-1.1
12	East Boston Yacht Club, East Boston	74.0	70.2	68.2	-2.0
13	East Boston High School, East Boston	64.2	60.4	64.9	4.5
A	Sumner near Lamson, East Boston	N/A	58.8	59.1	0.3
14	Jeffries Point Yacht Club, East Boston	64.9	60.8	60.9	0.1
15	Admiral's Hill, Chelsea	61.1	58.4	63.0	4.6
16	Bradstreet Avenue & Sales, Revere	69.0	72.8	71.1	-1.7
17	Carey Circle, Revere	58.3	62.4	60.7	-1.7
23	Myrtlebank/Hilltop, Dorchester	52.0	56.5	54.9	-1.6
24	Cunningham Park, Milton	51.9	54.6	53.2	-1.4
25	Squaw Rock Park, Quincy	51.2	49.9	48.4	-1.5
26	Hull High School, Hull	58.1	53.3	55.7	2.4
E	Farragut @ 2nd, South Boston	N/A	68.1	66.3	-1.8
Average change from 70 dB and above Between Alts 4 and 1A (5 Sites)					**-1.9**
Average change from 65 dB and above Between Alts 4 and 1A (10 Sites)					**-1.7**
Average change from all values Between Alts 4 and 1A (23 Sites)					**0.1**

Balanced against these improvements are significant increases in exposure at Site 2 in South Boston off of Runway 27 and Sites 13 and 15 in East Boston and Chelsea off of Runway 33L where noise is expected to increase 4.5 to 4.9 dB, although none of these specific sites is projected to experience DNL values in excess of 65 dB with the Preferred Alternative under this fleet assumption. A smaller increase of 2.4 dB is also expected at Hull High School, but at a DNL value of 55.7 dB, this is well below any criteria for significant impact.

Table 6.2-25 presents INM calculations of nighttime equivalent sound levels (LeqN)at specific points, reflecting the differences in exposure occurring during the hours from 10:00 PM to 7:00 AM. Appendix E presents similar calculations for the other alternatives under the 37.5M High RJ Fleet.

Nighttime equivalent sound levels show generally similar patterns of change between the No Action and Preferred Alternatives. The highest nighttime exposure levels of 65 dB and above occur at Sites 4 and 7 in Winthrop, Site 9 on Bayswater Street in East Boston, and Site 16 in Revere. Each of these locations is expected to experience decreases in nighttime noise of 1.3 to 2.1 dB if the Preferred Alternative is implemented. At three other Sites (3, 5, and 12) in South Boston, Winthrop and East Boston where nighttime exposure is lower but still above 60 dB, decreases in nighttime exposure of 1.7 to 2.3 dB are expected under the Preferred Alternative.

Balanced against these reductions in nighttime noise are increases in LeqN ranging from 3.6 to 4.3 dB at sites 1, 2, 13, 15, and E, though none of these locations is expected to have nighttime noise increase above 57.9 dB with the Preferred Alternative, and two of the sites (1 and E in the South End and on Farragut Street in South Boston) are expected to have increases to less than 50 dB.

Finally, Table 6.2-26 compares INM-computed maximum sound levels for the No Action and Preferred Alternatives at the specific points. For these and all other Alternatives, there are no expected differences between cases because the same aircraft operation is responsible for the highest level and neither the aircraft type nor the location of the operation changes from one Alternative to the next.

The one remaining supplemental noise metric, Time Above Threshold sound levels for both 24-hour and for nighttime hours, is reported in Appendix E for all 37.5M High RJ Alternatives.

In conclusion, the major findings regarding the study Alternatives and their relative impacts on community noise levels are supported by the evaluation of the High RJ Fleet and are generally consistent across all fleets examined in this study. The improved noise levels achieved through the added flexibility in use of runways afforded by the new unidirectional Runway 14/32 will reduce noise exposure in the most highly impacted areas still remaining around Logan Airport. Areas of Winthrop, East Boston (north of the airport), and Revere are all currently exposed or are expected to be exposed to DNL levels above 70 dB, with areas of Winthrop and East Boston experiencing levels above 75 dB even now. These can be reduced on the order of several decibels by the redistribution of traffic onto other runways in accordance with PRAS goals, though the redistribution will cause increased noise between DNL values of 65 and 70 dB in East Boston and Chelsea and cause increased noise from 60 to 65 dB in parts of South Boston.

Table 6.2-25
Comparisons of INM-Computed Nighttime Equivalent Sound Levels at Specific Points for the No Action and Preferred Alternatives – 37.5M High RJ Fleet

Noise Monitor	Location	No Action (Alternative 4)	Preferred Alternative (Alternative 1A)	Change (in dB) Preferred – No Action
1	Andrews Street, South End	44.6	48.2	3.6
2	B & Bolton, South Boston	51.4	55.4	4.0
3	South Boston Yacht Club, South Boston	60.9	58.6	-2.3
4	Bayview & Grandview, Winthrop	68.4	66.5	-1.9
5	Harborview & Faun Bar, Winthrop	60.8	59.1	-1.7
6	Somerset & Johnson, Winthrop	57.7	57.5	-0.2
7	Loring Road Near Court Road, Winthrop	69.1	67.0	-2.1
8	Morton & Amelia, Winthrop	59.1	58.0	-1.1
9	Bayswater & Nancia, East Boston	66.2	64.9	-1.3
10	Bayswater & Shawsheen, East Boston	58.6	57.5	-1.1
11	Don Orione, East Boston	53.4	52.4	-1.0
12	East Boston Yacht Club, East Boston	63.3	61.6	-1.7
13	East Boston High School, East Boston	54.0	57.9	3.9
A	Sumner near Lamson, East Boston	51.9	52.0	0.1
14	Jeffries Point Yacht Club, East Boston	53.8	53.6	-0.2
15	Admiral's Hill, Chelsea	52.1	56.2	4.1
16	Bradstreet Avenue & Sales, Revere	66.1	64.8	-1.3
17	Carey Circle, Revere	55.7	54.3	-1.4
23	Myrtlebank/Hilltop, Dorchester	49.1	47.2	-1.9
24	Cunningham Park, Milton	47.3	45.6	-1.7
25	Squaw Rock Park, Quincy	42.7	41.2	-1.5
26	Hull High School, Hull	46.7	48.5	1.8
E	Farragut @ 2nd, South Boston	43.6	47.9	4.3

Table 6.2-26
Comparison of Maximum Sound Levels (Lmax) for the No Action and Preferred Alternatives – 37.5M High RJ Fleet

oise onitor	Location	No Action (Alternative 4)	Preferred Alternative (Alternative 1A)
1	Andrews Street, South End	84.5	84.5
2	B & Bolton, South Boston	93.0	93.0
3	South Boston Yacht Club, South Boston	91.8	91.8
4	Bayview & Grandview, Winthrop	101.4	101.4
5	Harborview & Faun Bar, Winthrop	93.3	93.3
6	Somerset & Johnson, Winthrop	81.9	81.9
7	Loring Road near Court Road, Winthrop	97.1	97.1
8	Morton & Amelia, Winthrop	97.3	97.3
9	Bayswater & Nancia, E. Boston	103.9	103.9
10	Bayswater & Shawsheen, East Boston	90.1	90.1
11	Don Orione, East Boston	83.8	83.8
12	East Boston Yacht Club, East Boston	85.8	85.8
13	East Boston High School, East Boston	97.0	97.0
A	Sumner near Lamson, East Boston	81.2	81.2
14	Jeffries Point Yacht Club, East Boston	82.3	82.3
15	Admiral's Hill, Chelsea	96.4	96.4
16	Bradstreet Avenue & Sales, Revere	97.7	97.7
17	Carey Circle, Revere	87.1	87.1
23	Myrtlebank/Hilltop, Dorchester	79.7	79.7
24	Cunningham Park, Milton	75.8	75.8
25	Squaw Rock Park, Quincy	73.5	73.5
26	Hull High School, Hull	81.0	81.0
E	Farragut @ 2nd, South Boston	91.9	91.9

6.3 Land Use and Social Impacts

Under the Federal Aviation Administration's (FAA) National Environmental Policy Act (NEPA) directives, land use compatibility is typically associated with the extent of the airport's noise impacts. The noise analysis described in Section 6.2 has determined that the Preferred Alternative actually reduces the number of people in the most highly exposed areas around the Airport (DNL 75 and above as well as DNL 70 and above) compared to the No Action Alternative, and it causes only a minimal increase in the numbers (2 to 4 percent) of people exposed to DNL values above 65 dB. In addition, with better achievement of PRAS goals, the analysis indicates that the Preferred Alternative reduces the numbers of people in all high exposure increments compared to 1998 actual conditions. Sound insulation will be installed to mitigate for noise impacts (an increased number of people within the 65 dB DNL noise contour) resulting from the Preferred Alternative.

All proposed Airside Project Alternatives involve operational and/or construction improvements to reduce delay at Boston-Logan Airport. The noise analysis indicates that the Preferred Alternative will allow Logan Airport to more closely meet the established PRAS goals. The runway and taxiway components for the Preferred Alternative would be constructed on the existing airfield. The only relocation required for construction of Runway 14/32 is for the tenants of Building 60 in the South Cargo Area of the airport. The tenant of Building 61, the U.S. Postal Service, plans to vacate the building independently of the Airside Project. (See Section 6.3.4.1 for more detail.) The project is restricted to activities and purposes compatible with normal airport operations. As described in more detail below, it is compatible with existing land use plans and will not hamper redevelopment efforts in surrounding communities.

Based on the land use compatibility criteria outlined in FAA NEPA regulations, the Airside Project Alternatives with mitigation will have no impact on land uses adjacent to or in the immediate vicinity of the airport.

6.3.1 Consistency with Local Land Use Plans

This section discusses land use compatibility with respect to zoning of adjacent areas in East Boston, and presents a discussion of the South Boston waterfront area in response to the May 7, 1999 EOEA Certificate and applicable federal requirements.

6.3.1.1 East Boston

As a state entity, Massport is not subject to local zoning regulations in the performance of its essential governmental functions. All the Airside Project alternatives are nonetheless consistent with the proposed East Boston Neighborhood District Zoning Article (Article 53), which includes establishment of the Logan International Airport Subdistrict (LIA). The airport site is located within the LIA which has a stated purpose "to accommodate those uses necessary to the operation of an international airport while ensuring that land uses and development associated with operations of the airport are confined to the airport boundary and that such uses do not impose adverse impacts in other areas of the East Boston Neighborhood Plan, developed with the extensive

participation of the East Boston Planning and Zoning Advisory Committee, civic associations, business groups, and residents."

6.3.1.2 South Boston

The section of South Boston along the Fort Point Channel and Inner Harbor is known as the South Boston Waterfront District, and has historically been used for industrial use. However, new developments such as the Federal Courthouse, Seaport Hotel and future Boston Convention Center suggest a future mix of land uses in the district. The City of Boston has developed *The Seaport Public Realm Plan*[4] (the Plan) for the South Boston Waterfront District that contains land use and design guidelines on future development of this area. The proposed distribution of land uses emphasizes the creation of mixed use neighborhoods and public open space within the Fort Point Channel and Piers Districts, with the Reserved Channel District to the east of D Street remaining industrial. The Plan has taken into account FAA's requirements for safe runway operation in the recommendation of allowable building height in the Seaport District.

Under the Preferred Alternative, the arrival and departure paths for aircraft using Runway 14/32 will be over water in Boston Harbor. (See Figures 6.2-1 and 6.2-2 in Section 6.2) Runway 14/32 is being designed, and would be used, for unidirectional use only. All arrivals would be over Boston Harbor to the 32 approach end and all departures would be from the 14 end, heading out over the harbor. Therefore there will be no conflict with future development along the South Boston waterfront as a result of the construction of unidirectional Runway 14/32, or any of the other physical improvements under the Preferred Alternative.

6.3.2 Historic Resources Context

6.3.2.1 Section 4(f) Resources (Historic)

An assessment of impacts to cultural resources was conducted for the Preferred Alternative. There are no parklands, historic properties or sites, or other Section 4(f) resources on the airfield in the area of the proposed runway and taxiway improvements. Therefore, there are no significant adverse impacts Section 4(f) resources from the implementation of the Preferred Alternative. In addition, the Preferred Alternative will not substantially impair the historic integrity of any historic site or district. The Massachusetts Historical Commission (MHC) has concurred that the Preferred Alternative will have no adverse effect on significant historic properties (MHC letter to FAA, December 21, 1999, Appendix H). Therefore, the FAA has concluded that Section 4(f) is not applicable. See Section 6.3.3 for an additional discussion of parklands.

4 Boston Redevelopment Authority, *The Seaport Public Realm Plan*, dated February 1999.

6.3.2.2 Section 106 Historic Resources

An assessment of impacts to cultural resources was conducted for the Preferred Alternative. There are no historic properties on the airfield in the area of the proposed runway and taxiway improvements. Therefore, there are no direct impacts to historic properties from the implementation of the Preferred Alternative.

The analysis of potential indirect impacts associated with the Preferred Alternative was performed by comparing the 65 dB DNL contour for the No Action Alternative and the Preferred Alternative for the 29M Low Fleet scenario. Historic properties were identified in those areas where the 65 dB DNL contour for the Preferred Alternative extended beyond the 65 dB DNL contour for the No Action Alternative.

The FAA evaluated airport noise and land use compatibility in accordance with land use guidelines expressed in Federal Aviation Regulation (FAR) Part 150, Airport Noise Compatibility Planning (14 CFR 150). FAR Part 150 does not include guidelines specific to historic sites; however, the identified historic properties are comprised of commercial, manufacturing, and residential land uses, for which guidance is provided. In addition, general guidance within FAR Part 150 indicates that noise levels typically do not affect the relevant characteristics of urban historic districts (for example, their architectural features and recognition of their place in history). Moreover, when dealing with an existing airport (such as Logan Airport) within an urban setting (such as metropolitan Boston), any change in operating conditions aimed at more equitably distributing noise impacts (here, in accordance with the PRAS goals) may result in some increase in noise at specific historic sites while at the same time decreasing noise at other historic sites. As noted above, such impacts will not change the relevant characteristics (e.g., architectural features, historical significance) of such sites.

6.3.2.3 Indirect Impacts on Historic Properties

A description of historic properties identified within the net increased noise contour associated with the Preferred Alternative and a summary of potential impacts and mitigation are provided below (see Figures 6.3-1 to 6.3-3).

Saint Andrew Road, Boston/East Boston

St. Andrew Road is a three-block area (#54-154 St. Andrew Road) between St. Edward Road and Annavoy Street (see Figure 6.3-1), which is recognized for its high level of historic and architectural intactness and unity of scale. The neighborhood exhibits a street plan and sense of proportion, which are geographically and developmentally distinct when compared to the rest of East Boston. The growth of this neighborhood began in 1911, when the East Boston Company began to develop and sell off the lots, and continued to the mid-1930s. St. Andrew Road, surveyed in 1990, was recommended for inclusion in a proposed Bayswater National Register District.

Legend

No Action Alternative 29M Low (60 and 65 DNL)
Preferred Alternative 29M Low (60 and 65 DNL)

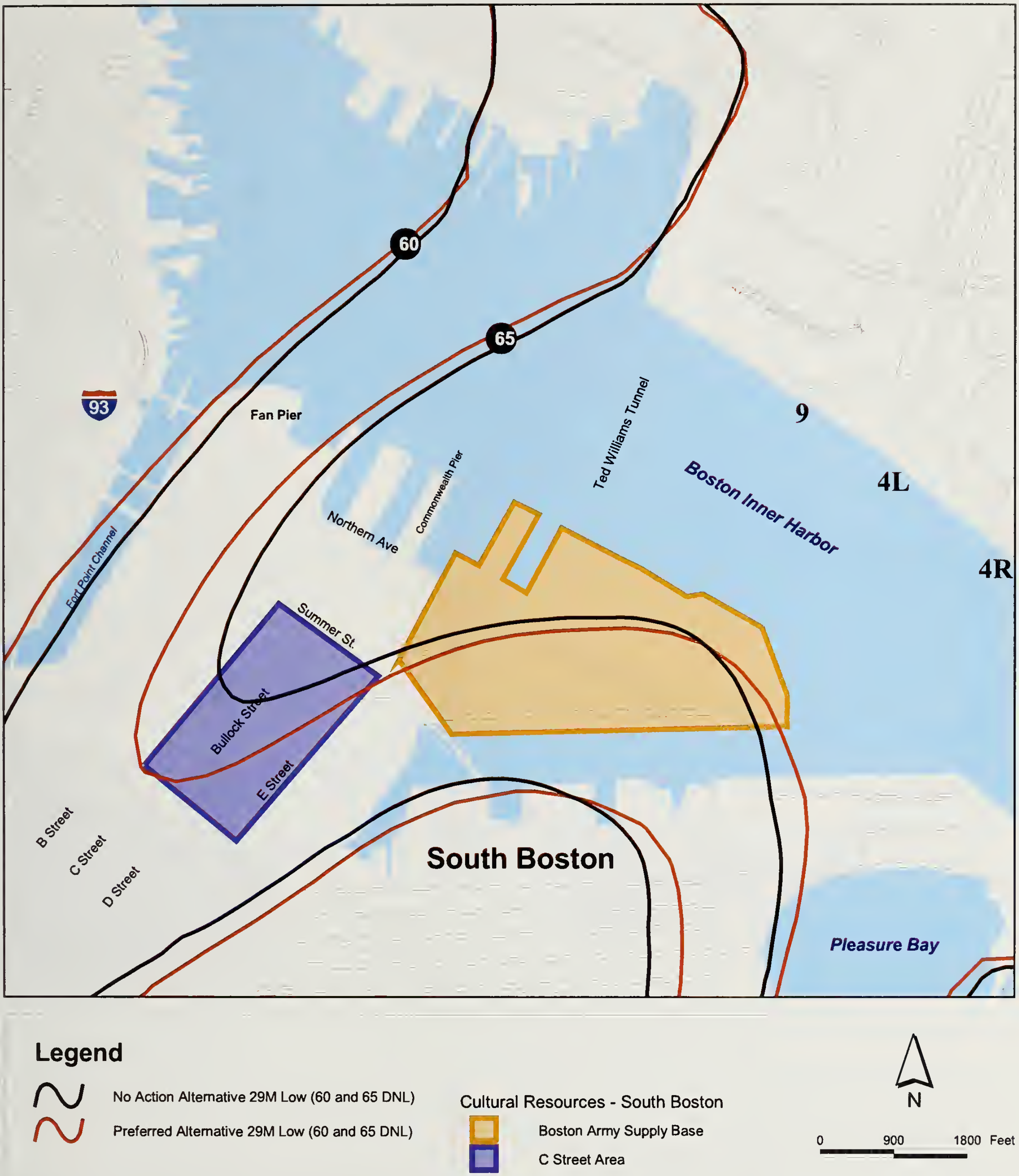
Cultural Resource Area
St. Andrews Road

Cultural Resources
240 Somerset Avenue
45 Enfield Road
75 & 77 Somerset Avenue
88 Somerset Avenue
94 Somerset Avenue

Source: Harris Miller Miller & Hanson

Figure 6.3-1

Cultural Resources - East Boston, Winthrop



Source: Harris Miller Miller & Hanson

Figure 6.3-2

Cultural Resources - South Boston

Source: Harris Miller Miller & Hanson

Figure 6.3-3

Cultural Resources - Chelsea

The majority of this residential district is currently within the 65 dB DNL contour associated with current Logan Airport operating conditions. A small portion of St. Andrew Road located between St. Edward Road and Shawsheen Road would be affected by the net increase in the 65 dB DNL contour associated with the Preferred Alternative.

Boston Army Supply, Boston/South Boston

The Boston Army Supply Base area is roughly 43 acres and encompasses 29 individual buildings, and one major structure, Drydock #3 (see Figure 6.3-2). The former Army base is built on land created as part of a gradual filling process in South Boston, which began in 1836 and continued to the mid-twentieth century. Construction of the base began in 1918 as part of a massive federal building campaign at East Coast ports to handle supplies for World War I. The facility underwent three subsequent building phases, including one associated with World War II. The base is significant as a surviving, planned, military-industrial complex which was a key factor in the early-twentieth-century attempts to revitalize the Port of Boston, and notable for the immense scale of its early reinforced-concrete structures. The complex was surveyed in 1997 and recommended for inclusion in the National Register of Historic Places. This site is now being redeveloped as the Boston Marine Industrial Park.

The net increase in the 65 dB DNL contour associated with the Preferred Alternative would affect a narrow strip of the Boston Army Supply Base area, comprising approximately six commercial and industrial buildings.

C Street Area, Boston/South Boston

The C Street Area in South Boston is a roughly rectangular district, characterized by well-preserved reinforced concrete and masonry buildings, averaging in height from three to nine stories (see Figure 6.3-2). The area contains a cluster of early-twentieth-century industrial warehouses of varying embellishment associated with the height of Boston's wool trade. The area was surveyed in 1997 and four individual buildings were noted to meet National Register eligibility criteria, specifically 401, 415, and 425 Summer Street and 80 Fargo Street. This area is now largely being redeveloped as the Boston Convention and Exhibition Center.

The C Street Area would be affected by the net increase in the 65 dB DNL contour associated with the Preferred Alternative; however, the four commercial buildings meeting National Register criteria eligibility within the area do not fall within the increased noise contour.

Bellingham Square Historic District, Chelsea

The public, commercial, and residential buildings of the Bellingham Square Historic District are typical of an early twentieth-century commercial and civic urban center. Developed within a short time period following the Great Fire of 1908, the area, shown on Figure 6.3-3, reflects a strong degree of architectural homogeneity, possessing integrity of design through similar scale, massing, and setting. The district is also historically significant for its use of city planning concepts, which controlled construction following the 1908 fire. The district was listed in the National Register of Historic Places in 1985.

A small section of this district to the east of Congress Avenue would be affected by the net increase in the 65 dB DNL contour associated with the Preferred Alternative.

Downtown Chelsea Residential Historic District, Chelsea

The Downtown Chelsea Residential Historic District, listed on the National Register in 1988, is a visually cohesive group of buildings located in a primarily residential section of the City's downtown area, as shown on Figure 6.3-3. The residential district historically complemented commercial development in Chelsea Square to the west, industrial activity along the riverfront to the south, and the City's institutional focus at Bellingham Square to the northeast. Many of the district's residences were built on speculation, initially to meet the needs of a rapidly expanding population, and later to meet the housing needs of a City devastated by the Great Fire of 1908.
A narrow strip of this district in the area of Congress Avenue would be affected by the net increase in the 65 dB DNL contour associated with the Preferred Alternative.

Winthrop: 45 Enfield Road, 240 Pleasant Street, 73 & 77 Somerset Avenue, 88 Somerset Avenue, and 94 Somerset Avenue

Five properties in Winthrop that are included in the Inventory of Historic and Archaeological Assets of the Commonwealth fall within the 65 dB DNL noise contour, as shown on Figure 6.3-1. Two of the properties have been recommended for inclusion in the National Register: 240 Pleasant Street, built in the late 1860s, is architecturally significant as the most stylish and substantial towered villa in town; and 94 Somerset Avenue is historically significant as the most intact of all the houses associated with Winthrop's talented Whorf family of painters, actors, producers, and commercial artists.

A small area within Winthrop, encompassing these five residential properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth, would be affected by the net increase in the 65 dB DNL contour associated with the Preferred Alternative.

Summary of Impacts and Mitigation for Historic Properties

FAR Part 150 provides that all land uses are considered to be compatible with noise levels less than 65 dB DNL and that commercial and manufacturing land uses are compatible land uses within the 65 dB to 70 dB DNL (FAR Part 150, Appendix A, Table 1). Commercial and industrial portions of historic properties affected by the Preferred Alternative remain below the 70 DNL noise compatibility guideline. Therefore, the existing commercial and industrial uses within those historic areas are compatible land uses.

FAR Part 150 further provides that residential land uses are not compatible within the 65 dB DNL, and if already in areas of 65 dB DNL or higher, that increases of 1.5 dB DNL or less are not significant. Moreover, FAA does allow for noise impacts to be mitigated through sound insulation of affected residential structures.

The FAA and Massport propose to mitigate noise impacts by sound insulating all affected residences, historic and non-historic, that fall within the largest 65 dB DNL contour for the Preferred Alternative. The structures to be included within the noise mitigation program would be subject to a detailed block-by-block analysis during project implementation. All sound insulation of historic structures would be undertaken in compliance with applicable federal and state guidelines to ensure protection of the resources. Preservation measures to maintain the existing form, integrity, and materials of the historic properties would be accomplished in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) (Secretary's Standards). The FAA and Massport would consult with the MHC as it has done previously with sound insulation of historic structures impacted by other Logan Airport projects (i.e., South Boston).

The FAA has determined that the sound insulation mitigation proposed under the Preferred Alternative has the potential to cause effects on historic properties (36 CFR 800.3), but such effect would not be adverse on historic properties if sound insulation is undertaken in accordance with the Secretary's Standards. As such, the FAA has determined that a sound insulation program implemented under the Preferred Alternative would have no adverse effect (36 CFR 800.5 (b)) on significant historic properties. The MHC has concurred with the no adverse effect finding (see Appendix H for a copy of the MHC letter to FAA, December 21, 1999).

In addition, since the noise effects of the Preferred Alternative will be mitigated, the normal activity of the Section 4(f) resources will not be affected by the proposed action. The proposed improvements at Logan Airport will neither incorporate land from the Section 4(f) resource nor affect the normal activity or aesthetic value of a public park, recreation area, wildlife refuge or historic site. Therefore, as the Preferred Alternative does not substantially impair a historic site or district, the FAA has determined that Section 4(f) is not applicable.

FAA has also determined that there are no feasible or prudent Alternatives to the Preferred Alternative that would achieve the delay reduction, safety, transportation, noise distribution and other objectives of the Preferred Alternative. Therefore, even if the noise levels associated with the Preferred Alternative were determined to interfere with the normal activity associated with the two identified historic districts (which they do not), the FAA concludes that the sound insulation proposed for those structures includes all possible planning to minimize harm resulting from that increase in noise.

6.3.3 Other Section 4(f) Resources

In response to the May 7, 1999 EOEA Certificate, an assessment of impacts to parklands was conducted for the Preferred Alternative. There are no parklands, historic properties or sites, or other Section 4(f) resources on the airfield in the area of the proposed runway and taxiway improvements. Therefore, there are no direct impacts to Section 4(f) resources from the implementation of the Preferred Alternative. In addition, the Preferred Alternative will not use any portion of a park, recreation area, or other Section 4(f) resources.

The analysis of potential noise indirect impacts associated with the Preferred Alternative was performed by comparing the 65 dB DNL contour for the No Action Alternative and the Preferred Alternative for the 29M Low Fleet scenario. No parklands were identified in those areas where the 65 dB DNL contour for the Preferred Alternative extended beyond the 65 dB DNL contour for the No Action Alternative. As depicted in Figure 6.3-4, the Arnold Arboretum, Emerald Necklace, and Franklin Park are well outside the 65 dB DNL noise contours associated with the Preferred Alternative. Therefore, the Preferred Alternative will have no impact on these parklands.

The noise contour map also depicts that the Boston Harbor Islands, while within the existing No Action Alternative's 65 dB DNL noise contours, will have no noise increase with the Preferred Alternative. In addition, the Boston Harbor Islands National Recreation Area is located under existing FAA approved flight tracks, many designed by FAA and Massport to minimize noise over residential areas associated with Logan Airport operations. For example, the use of Runway 15R for late night (midnight to 6:00 AM) takeoffs and Runway 33L for late night landings keeps aircraft flight tracks over Boston Harbor, making them the most desirable runways for noise abatement. According to the legislation that established the Boston Harbor Islands Recreational Area:

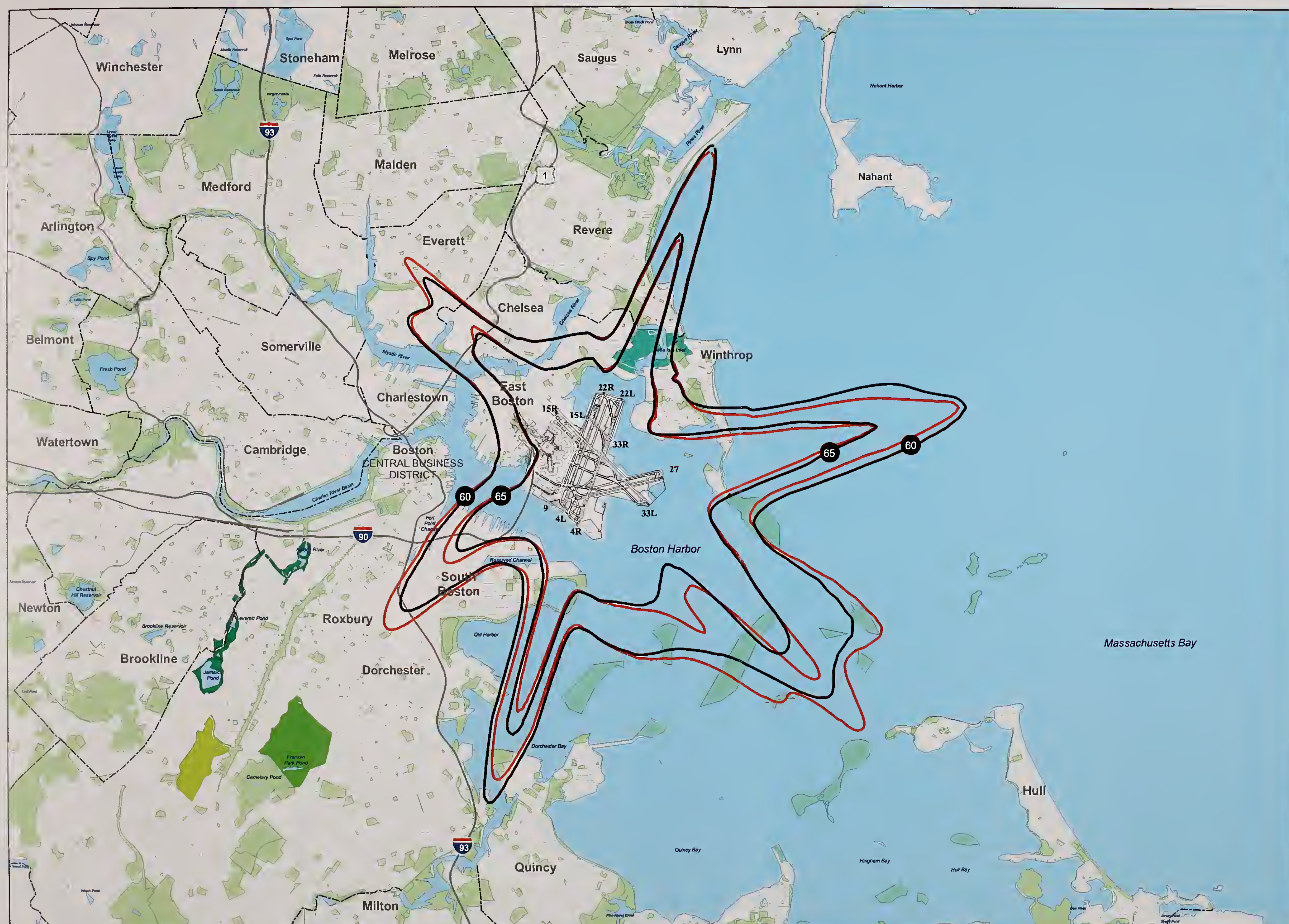
"the present and future maintenance, operation, improvement, and use of Boston-Logan International Airport and associated flight patterns from time to time in effect shall not be deemed to constitute the use of publicly owned land or a public park, recreation area, or other resource within meaning of section 303(c) of title 49, United States Code, and shall not be deemed to have a significant effect on natural, scenic, and recreation assets with the meaning of section 47101(h)(2) of title 49, United States Code."[5]

Therefore, Boston Harbor's National Recreation Area is considered to be a compatible land use.

The dispersion analysis conducted for the purposes of the air quality assessment (see Section 6.4 of this Chapter) indicates no violation of the National Ambient Air Quality Standards (NAAQS) at any of the 12 modeled receptors. Each of the receptors, or locations for which air pollutant concentrations are modeled, is closer to Logan Airport than Arnold Arboretum, Harbor Islands, or the series of parks in the Emerald Necklace.

The receptors at Union Park, C and Broadway, and Castle Island lie closest to these parks, and concentrations at these locations are lowest under the Preferred Alternative and highest under the No Action Alternative but always lower than the NAAQS. Because the receptors nearest the airport do not have modeled concentrations above the NAAQS, it can be concluded that the more distant park locations will also have concentrations that meet the standards and will not experience adverse air quality impacts.

5 Sec. 1029. Boston Harbor Island Recreation Area. Excerpted from P.L. 104-333, 110 Stat. 4093 the "Omnibus Public Lands Management Act of 1996."



Legend

No Action Alternative 29M Low (60 and 65 DNL)

Preferred Alternative 29M Low (60 and65 DNL)

Parklands

- Arnold Arboretum
- Belle Isle Marsh Reservation
- Boston Harbor Islands
- Franklin Park
- Olmsted Park / Emerald Necklace
- Open Space
- Census Block Boundaries

N

0 0.5 1 1.5 Miles

massport

Figure 6.3-4

Parklands and 29M Low - No Action and Preferred Alternatives

Source: Harris Miller Miller & Hanson

6.3.4 Social Impacts

This section discusses the social impacts of the Preferred Alternative on the surrounding communities in accordance with FAA environmental review criteria. The Environmental Justice Analysis is presented in Section 6.8. Implementation of any of the Airside Project alternatives would occur on the airport, and therefore there will be no division or disruption of established communities or orderly planned development as a result. The Alternatives do not require the relocation of any residence or alteration of surface transportation patterns. Construction of unidirectional Runway 14/32 under the Preferred Alternative requires the demolition of two buildings (60 and 61) in the South Cargo area of the airport. Relocation assistance will be provided to affected businesses as required under applicable law, and no appreciable change in employment is expected to result. The following section provides a more detailed discussion of impacts to the South Cargo Area.

6.3.4.1 South Cargo Area

FAA regulations define areas adjacent to runways that must be maintained free of obstructions. These areas are collectively known as protection zones. There are two distinct sources that dictate the development of design guidelines for unidirectional Runway 14/32. The first is the FAA Advisory Circular 150/5300-13, entitled Airport Design, and the second is Federal Aviation Regulation (FAR) Part 77 entitled Objects Affecting Navigable Airspace. The Runway 14/32 centerline profile is required by federal regulation to be the highest point within various defined safety and object free areas and FAR Part 77 surfaces. (See Section 3.2.2.1 for a more detailed discussion of FAA design surfaces.)

The design criteria for the Runway Object Free Area (ROFA), by nature of its large width, becomes the controlling factor for impacts to Logan Airport 's South Cargo and General Aviation Areas. The ROFA for Runway 14/32 (based on a C-III design aircraft category) is 800 feet wide, centered on the runway centerline and extending 1,000 feet beyond each of the runway ends. Within 400 feet on either side of the runway, the areas must be free of objects that protrude above the adjacent runway safety area edge elevation. Aircraft parking is also prohibited within these areas. A portion of Harborside Drive will need to be relocated outside the ROFA at the Runway 14 end for all layout options. There are no other areas in conflict with the ROFA elsewhere along the alignment of the proposed unidirectional Runway 14/32, since the remaining section of the runway would be built on the existing airfield.

The impact of providing a clear ROFA for Runway 14/32 includes the demolition of Buildings 60 and 61 in the South Cargo Area and the elimination of six cargo aircraft parking positions (SC1 through SC6) and approximately nine aircraft parking positions within the General Aviation (GA) Area. The aircraft parking spaces can be dispersed to existing areas on the airfield approved for aircraft parking. These could include designated parking areas at such locations as the North Cargo Area.

The South Cargo Area includes cargo uses and office related-functions. Construction of Runway 14/32 would require Massport to acquire Building 60 and relocate the tenants. This building contains approximately 74,000 square feet and is owned by MLR Management, which has a ground lease from Massport for the site. MLR leases space to Air France, Air General and Nippon Express.

Building 61 is owned by Massport and directly leased to the U.S. Postal Service on a short-term basis as a temporary facility. The U.S. Postal Service has indicated an interest in relocating from its existing space independent of the construction of Runway 14/32. Therefore, demolition of this building would not require a relocation of the tenants.

Relocation assistance for eligible tenants will be provided in accordance with applicable provisions of the "Uniform Relocation Assistance and Real Property Acquisition Policies Act" of the 1970, as amended and Part 24 of 49 CFR, as well as MGL Chapter 79A and implementing regulations. Relocation assistance measures include relocation advisory services and payments for moving and relocation costs. Relocation resources would be available to all business relocatees without discrimination.

The majority of the tenants of Building 60 are involved in the business of consolidating and forwarding freight. This use is not dependent on cargo positions SC1-SC6 located on the adjacent apron. A review of warehouse/distribution facilities in the area indicates that there is some opportunity in the City of Chelsea Airport Overlay District for relocation of these tenants.[6] In addition, new cargo facilities such as the International Cargo Port in South Boston offer opportunities for relocation. The relocation of the tenants of Building 60 is not considered to be a significant social impact.

6 Personal communication, Jay Ash, then Executive Director of the Office of Planning and Development, City of Chelsea, January 16, 1999.

6.4 Air Quality/Odors

This section presents the results of the air quality assessment of the No Action Alternative and Preferred Alternative on future-year air quality conditions. Section 5.4 (Affected Environment - Air Quality/Odors) describes existing air quality conditions in the vicinity of Logan Airport and contains the 1993 Historic Modeled Condition and 1998 Actual Condition results.

6.4.1 Assessment Approach and Methodology

This analysis is based primarily on two air quality impact assessment methods: (1) emissions inventories; and (2) dispersion modeling. Essentially, the emissions inventory results are used to quantify the types and amounts of air emissions associated with Logan Airport, in the vicinity of the airport. The dispersion modeling results enable the evaluation of air quality impacts for individual neighborhoods. This approach is consistent with both FAA guidelines and MEPA requirements.

To the fullest extent possible, the methodology (including models, data sources, assumptions, etc.) used to conduct this assessment is consistent with the methods developed previously for the GEIR/ESPR and Annual Updates/EDRs. Any changes or departures in this analysis from the GEIR/ESPR protocol are discussed in this section, and are largely attributable to the availability of updated information or to other differences attributable to the Airside Project.

The essential elements and results of the emissions inventories and dispersion modeling are discussed separately below. For comparative purposes, results from both the Airside Project and the *1997 Annual Update* air quality analyses are presented. Additional information, data, and other supporting materials used and/or developed in connection with the assessment are contained in Appendix M of the Airside Project Draft EIS/EIR for the 29M Low, 29M High, 37.5M Low, 37.5M High and 45M High future Fleet scenarios. Additional information, data, and supporting materials for the 37.5M High RJ Fleet scenario are contained in Appendix F of this Supplemental DEIS/FEIR.

Consistent with the scope of the Airside Project Draft EIS/EIR, the Airside Project air quality analysis was conducted for the 29M Low Fleet and 37.5M High Fleet scenarios. The 1993 Historic Modeled Condition and the 1998 Actual Condition results are contained in Section 5.4 of this Supplemental DEIS/FEIR.

Because the FAA's Emissions Dispersion Modeling System (EDMS) has become the required model for air quality assessments of aircraft sources since the Airside Project air quality analysis was conducted, a comparison of the EDMS to the Logan Dispersion Modeling System (LDMS) is also presented in this section. For this demonstration, the emissions inventories and dispersion analyses for both models are compared using the Preferred Alternative under the 29M Low Fleet scenario.

6.4.1.1 Emissions Inventories

The emissions inventories represent compilations of air emissions generated by individual Logan Airport sources for each Airside Project Alternative, enplanement level and operational forecast. The emissions inventories also include aircraft ground service equipment, as well as on- and off-site motor vehicle traffic. The results are expressed in units of kilograms/day (kg/day) for each pollutant and emission source. In this way, comparisons between scenarios with the GEIR/ESPR and with SIP goals can be easily made.

The types of air pollutant emissions included in the inventory are CO, NOx, PM_{10}, and volatile organic compounds (VOCs). CO, NOx, and PM_{10} are EPA criteria air pollutants. Because O_3 emissions cannot be calculated directly, total VOCs are used as a surrogate, or "indicator," of O_3-forming pollutants. Similarly, VOCs from low power aircraft operational modes (i.e., taxi-in, taxi-out, and idle/delay) are used as indicators of odor.

For this assessment, as with other airports, the air pollutants SO_2 and lead were not included in the emissions inventories because airports (including Logan) are not identified as significant sources of these emissions.

NOx emissions occur principally in the form of NO when emitted from the fuel combustion process and then are partially oxidized to NO_2 over time and distance. Therefore, in accordance with DEP guidelines, a 25 percent NO-to-NO_2 conversion factor was used in this analysis.

In general, aircraft emissions are primarily a function of aircraft type, engine type, number of operations, and operational times-in-mode. Essentially, aircraft operations have the following six components: approach, landing, taxi-in, taxi-out, take-off, and climb-out. Following conventional air quality analysis methods, airborne emissions are modeled up to 3,000 feet. Aircraft emissions above this altitude do not have any discernable ground level effects near the airport. Ground-based delay periods are also included in the aircraft emissions analysis.

For the Airside Project analysis, the aircraft fleet mix, number of operations, runway use, terminal assignments, and airborne times-in-mode were developed by individual aircraft type. Similarly, ground-based times-in-mode (including taxi-in, taxi-out, taxiway queues, and end-of-runway delay periods) were developed using the Airport Machine model. Aircraft engine types and emission rates were obtained from the FAA. By comparison, the ground-based aircraft times-in-mode for the *1997 Annual Update* air quality analysis were obtained from the *Logan Airport 1993 Annual Update.*

For aircraft ground service equipment and vehicles, Logan-specific data concerning equipment type, service times, loading factors, emission rates and fuel type were obtained from Massport.[5]

Both on- and off-site motor vehicle traffic data were obtained from the *1994/1995 GEIR*. This includes traffic volumes, travel speeds, idle periods, and fleet mix for the on-airport, East Boston, and Regional Study Areas. For the GEIR, East Boston and regional traffic are segregated; however, the Annual Updates only report on airport study area traffic. The EPA MOBILE5b motor vehicle emission rates were used based on DEP recommended input factors.

Emission rates for the Logan Airport central heating/cooling plant were derived from Massport permitting documents[6] for this facility. Similarly, emission rates for the existing and new fuel storage and distribution systems were obtained from Massport documents.[7]

The various sources of data and information used to develop the emissions inventories are listed in Table 6.4-1.

For the Airside Project, both the emissions inventories and dispersion modeling were conducted using the Logan Dispersion Modeling System (LDMS). For the *1997 Annual Update*, only the emissions inventory of the LDMS is used (i.e., dispersion modeling was not conducted in the GEIR). This computer model was developed by Massport and has been reviewed and approved for use at Logan Airport by DEP and EPA Region I. This model is described below.

6.4.1.2 Dispersion Modeling

The LDMS has two components: (1) a module that calculates total emissions for all aircraft operations, GSE, motor vehicles, fuel storage and transfer facilities, and other miscellaneous sources; and (2) the U.S. EPA Industrial Source Complex (ISC) dispersion model that predicts ambient pollutant concentrations.

▼

5 "Logan Airport Emission Factors." February 1992, prepared by KM Chng Environmental, Inc. for Massport.

6 Table 4 – Emission Rates and Stack Parameters for the Logan Cooling/Heating Plant for the Period after Retirement of the Existing Waukeshaw Generators - Tech Environmental, Inc., September 30, 1996.

7 *Final Environmental Impact Report.* "Jet Fuel Storage Facility: Boston-Logan Airport." April 16, 1996, prepared by Earth Tech, Inc. for Massport.

Table 6.4-1
Air Emissions Inventories Data Sources

Aircraft		Ground Service Equipment		Motor Vehicles		Miscellaneous	
Source	**Parameter**	**Source**	**Parameter**	**Source**	**Parameter**	**Source**	**Parameter**
Airside EIS/EIR	Fleet Mix Operations, by hour and aircraft type Runway Use Terminal Assignments In-flight Times-in-Mode(1) Runway End of Taxiway Queue Delay(1) Ground-based Times-in-Mode	Massport	Equipment Type Service Times Fuel Type Load Factors Conversion Rates Emission Rates	GEIR/ESPR	On-Airport ■ Traffic ■ Parking Curbside ■ Fleet mix East Boston ■ Airport Traffic ■ Non-airport traffic Region ■ Airport Traffic ■ Non-airport traffic	Massport	Heating Plant Factors Fuel Storage Facility Factors Fuel Distribution System Factors
FAA	Engine Types, by aircraft Engine Emission Rates			DEP	MOBILE5b Input Factors Off-airport fleet mix PART5 Emission Factors	EPA	Stationary Source Emission Factors
				EPA	MOBILE5b Emission Factors PART5 Emission Factors		

1 These data used for the *1997 Annual Update* were obtained from the *1992 Final GEIR* (July 1993).

The LDMS is composed of approximately 150 area, volume, and point sources representing the following air emission source groups at Logan:

- Aircraft Operations on:
  - Gate Aprons
  - Taxiways
  - Heads of Runways
  - Runways
  - Airborne to 3,000 feet

- Ground Service Vehicles and Equipment

- Ground Transportation on:
  - Logan Airport Loop Roads (including terminal curb-side idling and parking garage movements)
  - Route 1A (from the tunnels to Neptune Road)
  - Ted Williams Tunnel (TWT) Toll Booths (vehicle idling)
  - I-90 (from the TWT to Route 1A)
  - TWT Vent Building

- Logan Airport Central Heating/Cooling Plant
- Fuel Storage/Transfer Facilities

The locations of these individual sources (including proposed Runway 14/32, the Centerfield Taxiway and other improvements comprising the Preferred Alternative), as well as the 12 community receptors (described below), were obtained from scaled drawings of Logan Airport and its environs.

For the dispersion modeling, the emission rates from each source were varied by hour of the day, based on existing and forecasted activity levels at Logan Airport over a 24-hour period. In addition, one full year of hourly meteorological data, recorded at Logan Airport in 1993, was used to model the simultaneous occurrence of site-specific wind conditions and emission rates.

Ambient levels of CO, NO_2, and PM_{10} were predicted over time periods consistent with the NAAQS and other appropriate guidelines. As discussed above, because there are no standards for ambient VOC levels, surrogate benchmarks were used. As an O_3 indicator, total VOC emissions from all Logan Airport sources were modeled over 24 hours. For odor, low power aircraft emissions of VOCs were modeled over one-hour intervals. In this way, comparisons between scenarios, Alternatives, and regulatory criteria can be easily made. These time periods and criteria are summarized in Table 6.4-2 for all four pollutants.

Table 6.4-2
Dispersion Modeling Averaging Times and Background Levels

Pollutant	Averaging Time	Standards (μg/m3)	Background Concentration (μg/m3)
CO	1-Hour	40,000	4,446
	8-Hour	10,000	2,502-2,262
HC (or VOCs)	1-Hour (odor indicators)	N/A	N/A
	24-Hour (ozone indicators)	N/A	N/A
NO_2	1-Hour	320	163-173
	Annual	100	53-58
PM_{10}	24-Hour	150	45-48
	Annual	50	23

N/A not applicable

In order to account for (1) natural sources (e.g., forest fires, pollen, marine salts, fugitive dust, etc.), and (2) non-airport sources of air emissions located both within and outside the study area, background concentrations of air pollutants were added to the dispersion model results.

Consistent with DEP guidelines, these background levels were derived from monitoring data collected at the Bremen Street station in East Boston. Located adjacent to the northwest boundary of the airport, ambient levels of CO, NO_2, and PM_{10} are recorded at this site (see Table 5.4-3 in Section 5.4.1.2). Because of this proximity, these measured levels likely include emissions from Logan. Therefore, as a highly conservative approach, the upper bounds of these pollutant concentrations were used as the background levels in the dispersion modeling analysis. This results in the "double counting" of Logan-related emissions. Table 6.4-2 also contains these background levels.

To evaluate the air quality impacts of the No Action Alternative and the Preferred Alternative on individual neighborhoods surrounding the airport, 12 receptors were modeled. These receptors represent neighborhood-specific concentrations of air pollutants resulting from the combined effects of airport operations, background levels, and local meteorology. These receptors, illustrated in Figure 6.4-1 and individually described in Table 6.4-3, were specifically selected for this analysis by DEP. As stated previously, the GEIR and its Annual Updates do not include dispersion modeling.

Table 6.4-3
Receptor Location for Dispersion Modeling

Receptor No.	Community	Location
1	East Boston	Jeffries Point Park tennis court, east end of Sumner Street
2	East Boston	Constitution Beach Bath House, east end of Coleridge Street
3	East Boston	Intersection of Annavoy and Bayswater Streets
4	Winthrop	Intersection of Court and Loring Roads
5	Winthrop	Cottage Park Yacht Club, south end of Orlando Avenue
6	Winthrop	Point Shirley intersection of Grandview and Bayview Avenues
7	Castle Island	Intersection of Farragut Road and First Street
8	South Boston	Intersection of Broadway and C Street
9	Southeast End	Union Park Street between Tremont Street and Shawmut Avenue
10	Eagle Hill	Intersection of Condor and Glendon Streets
11	Orient Heights	Intersection of Tower Drum Lane and Gladstone Street
12	Revere Beach	Public beach on Broad Sound

massport

Figure 6.4-1

Air Quality Modeling Receptor Locations

6.4.2 Airside Project Emissions Inventories and Dispersion Modeling Results

The air quality impacts of the No Action Alternative and the Preferred Alternative are presented and discussed below. According to federal guidance for air quality impact assessments, it is more important to compare future-year emissions with and without the Preferred Alternative than it is to compare current and future-year emissions. Therefore, the presentation of the results of the air quality analysis is focused on comparing the Preferred Alternative to the No Action Alternative.

The air quality analysis results for the No Action Alternative and Preferred Alternative under the 29M Low Fleet and 37.5M High Fleet scenarios are described in Section 6.4.2.1 and 6.4.2.2. The results for all other Alternatives and for previously analyzed future fleets were presented in detail in the Airside Project Draft EIS/EIR. Summary results for these alternatives and future fleet scenarios are also contained in Appendix F of this Supplemental DEIS/FEIR. Section 6.4.4 presents the emissions inventory and dispersion results for the 37.5M High RJ Fleet. The results for the 1993 Historic Modeled Condition and 1998 Actual Condition were presented in Section 5.4.3.2.

To facilitate further comparison, these results are compiled from tables contained in Appendix M of the Airside Project Draft EIS/EIR and represent the total contributions for all Logan Airport sources previously identified as aircraft, GSE, motor vehicles, and other miscellaneous sources. Each set of results is presented by pollutant type.

For comparative purposes, the emissions inventory results from the Logan Airport 1997 *Annual Update*[8] are also provided. These results are based on 29 million (29M) and 37.5 million (37M) annual passengers, respectively.

The air quality assessments employed in both the Airside Project EIS/EIR and GEIR/ESPR Annual Updates consider aircraft emissions in the LTO cycle from a flight altitude of 3,000 feet to landing, taxiing, idling and take-off to 3,000 feet.

The Preferred Alternative airborne delay reductions will also result in reductions of emissions of aircraft in holding patterns, which impact the region, but do not appear in the air quality assessment. The pollutants reduced (largely NOx) will contribute to ozone reduction in the region. In addition, delay reduction results in considerable fuel savings.

6.4.2.1 Emissions Inventory Results

CO Emissions

Based on the results of the emissions inventory, the three primary sources of CO at Logan Airport are ground support equipment, aircraft, and motor vehicles representing

8 The *Logan Airport 1997 Annual Update* was the last Annual Update that included future forecasts (1999/2010).

approximately 50, 35, and 10 percent of the total, respectively, for all future year scenarios and the PreferredAlternative.

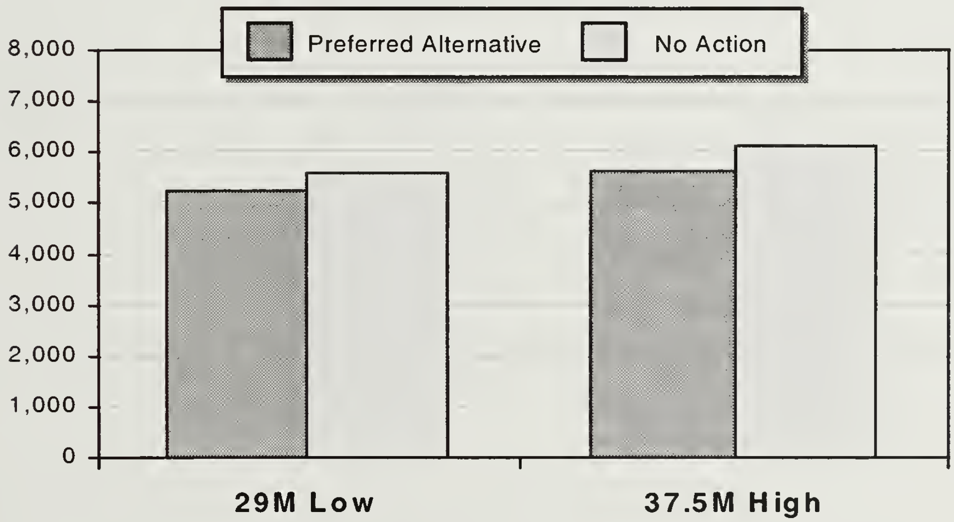
In general, CO emissions from ground support equipment will decrease in the future, as the older equipment is replaced and cleaner-burning fuels are phased in. CO emissions from aircraft will also decline in future years as Stage 2 aircraft are replaced with cleaner-burning Stage 3 aircraft. However, these decreases will be partially offset by the forecasted increase in aircraft operations at Logan Airport over time. Motor vehicle emissions will continue to decline as a result of the federal motor vehicle emissions control program.

As shown in Table 6.4-4 and Figure 6.4-2, the Preferred Alternative is expected to generate a lower amount of total CO emissions than the No Action Alternative. This pattern, the same for all forecasted enplanement and operational levels, is largely attributable to improved airside operating efficiencies associated with the Preferred Alternative.

Table 6.4-4
CO Emissions Inventory - All Sources

Alternative	29M Low Fleet Scenario		37.5M High Fleet Scenario	
	kg/day	tons/year	kg/day	tons/year
Preferred Alternative - All Actions	13,022	5,239	13,976	5,623
No Action Alternative	13,905	5,594	15,236	6,129
1997 Annual Update	14,470	5,821	16,686	6,713

Figure 6.4-2
CO Emissions Inventory – All Sources (ton/year)



When compared to the CO emissions inventory results for future year conditions, contained in the *1997 Annual Update*, the Airside analysis results produce lower values. These differences are due to the refined assessment of airfield operating conditions developed in support of this Supplemental DEIS/FEIR.

NOx Emissions

Aircraft represent the primary source of NOx emissions at Logan Airport generating approximately 75 percent of the total. Ground service equipment, the central heating/cooling plant, and motor vehicles represent roughly 10, 5, and 3 percent of the total, respectively.

NOx emissions from aircraft are expected to increase slightly in future years. This is an unavoidable consequence of phasing in quieter, more fuel-efficient engines. Manufacturers are working to develop engines that will emit less NOx, but this new technology has not been factored into this analysis. NOx emissions from GSE and motor vehicles are also predicted to increase slightly, corresponding to the forecasted increase in operations at Logan, regardless of airside improvements. NOx emissions associated with the central heating/cooling plant are predicted to increase similarly.[9]

As shown in Table 6.4-5 and Figure 6.4-3, the Preferred Alternative is predicted to generate a lower amount of total NOx emissions than the No Action Alternative. Over time, if the airside improvements are not made, emissions are expected to increase at Logan Airport because of the increase in operations and the phasing in of Stage 3 aircraft, which produce more NOx than louder, less fuel efficient Stage 2 aircraft. However, by reducing aircraft delay, implementation of the Preferred Alternative would reduce the rate of NOx increase associated with Stage 3 aircraft.

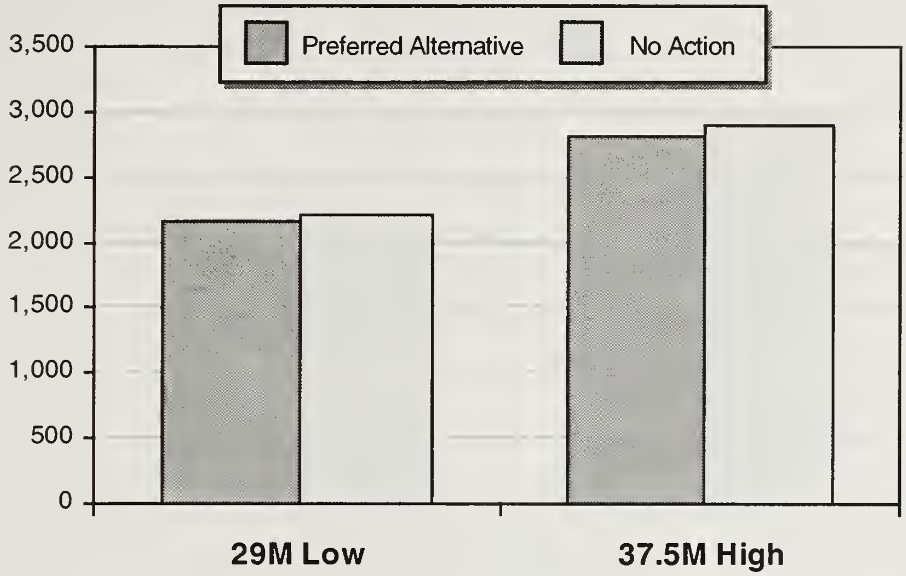
When compared to the 29M Low Fleet scenario and the 37.5M High Fleet scenario NOx emissions inventory results contained in the *1997 Annual Update*, the Airside analysis results are lower. These differences are due to the refined assessment of airfield operating conditions developed in support of this Supplemental DEIS/FEIR.

Table 6.4-5
NOx Emissions Inventory - All Sources

Alternative	29M Low Fleet Scenario		37.5M High Fleet Scenario	
	kg/day	tons/year	kg/day	tons/year
Preferred Alternative – All Actions	5,362	2,157	6,997	2,815
No Action Alternative	5,491	2,209	7,183	2,890
1997 Annual Update	6,670	2,683	8,343	3,356

9 Table 4 – Emission Rates and Stack Parameters for the Logan Cooling/Heating Plant for the Period after Retirement of the Existing Waukeshaw Generators - Tech Environmental, Inc., September 30, 1996.

Figure 6.4-3
NOx Emissions Inventory – All Sources (ton/year)



Total VOC Emissions

As a precursor to O_3 formation, VOCs are considered an O_3 indicator in this analysis. In the future, the three primary sources of total VOCs at Logan Airport will be aircraft, fuel storage/transfer facilities, and ground service equipment, representing approximately 40, 30, and 20 percent of the total, respectively.

As discussed above in connection with CO emissions, the VOC content of aircraft exhaust will decline in future years as newer, more efficient, engines are phased in. Similarly, VOC emissions from GSE are expected to decrease as the older equipment is replaced and cleaner-burning fuels are introduced. Evaporative VOCs associated with fuel storage and transfer facilities are a function of the fuel throughput volumes, and are generally well controlled within their containment vessels.

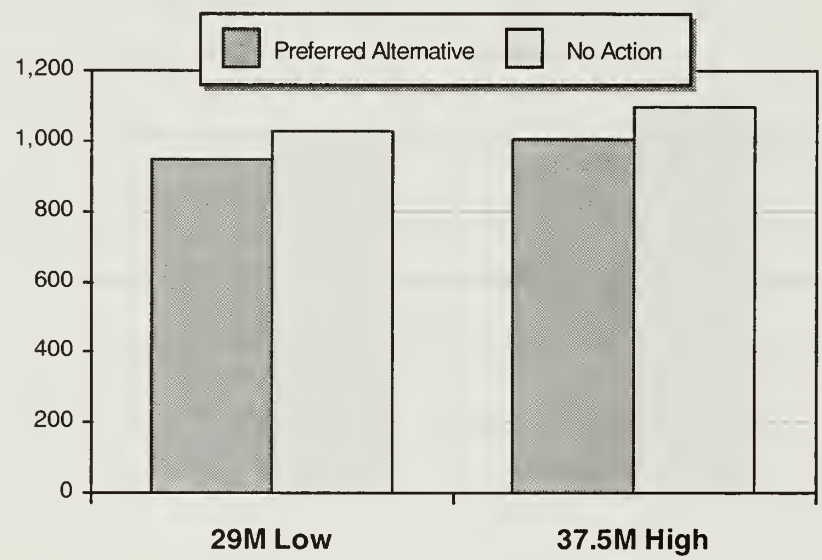
As shown in Table 6.4-6 and Figure 6.4-4, total VOC emissions from all sources at Logan Airport are predicted to increase slightly over time in association with the forecasted increase in operations. However, the Preferred Alternative is expected to generate a lower amount, when compared to the No Action Alternative. This outcome is largely attributable to improved airfield efficiency and shorter delay periods associated with the Preferred Alternative. When compared to the 1999 and 2010 VOC emissions inventory results for the 29M Low and 37.5M High scenarios contained in the *1997 Annual Update*, the Airside analysis values are lower. These differences are due to the refined assessment of airfield operating conditions developed in support of this Supplemental Draft EIS/Final EIS.

Table 6.4-6
Total VOC Emissions Inventory - All Sources (1)

Alternative	29M Low Fleet Scenario		37.5M High Fleet Scenario	
	kg/day	tons/year	kg/day	tons/year
Preferred Alternative - All Actions	2,350	945	2,497	1,005
No Action Alternative	2,553	1,027	2,721	1,095
1997 Annual Update	3,269	1,315	3,207	1,290

(1) Includes aircraft sources, GSE, on-site motor vehicles, and other miscellaneous sources. (See Appendix M of the Airside Project Draft EIS/EIR for individual sources.)

Figure 6.4-4
Total VOC Emissions Inventory – All Sources (tons/year)



Odor-causing Emissions

As discussed previously, VOC emissions associated with aircraft low power operations (i.e., taxi-in, taxi-out, and idle/delay) are considered to be potentially odor causing. Therefore, the same trends in total VOCs described above for aircraft emissions are applicable to these odor-causing VOCs. That is, the VOC content of aircraft exhaust will decline in future years as newer, more efficient aircraft engines are phased in.

As shown in Table 6.4-7 and Figure 6.4-5, the amounts of odor-causing VOC emissions at Logan Airport are not expected to change significantly into the future. However, there is a noticeable reduction in these emissions when comparing the Preferred Alternative to the No Action Alternative. The Preferred Alternative produces lower odor-causing VOC emissions than the No Action Alternative.

The predicted reduction in odor-causing VOCs is attributable to improved airfield operating conditions and reduced aircraft delay periods associated with the individual Alternatives. Moreover, under the Preferred Alternative, some additional flexibility is gained on how airfield operations are managed, which may lead to further reductions in odor-causing VOC emissions.

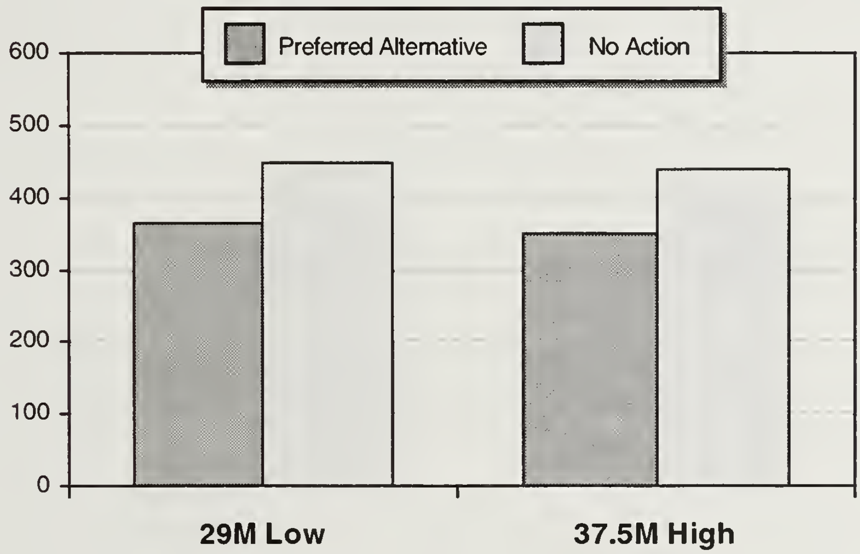
Table 6.4-7
Odor-causing VOC Emissions Inventory - All Sources (1, 2)

Alternative	29M Low Fleet Scenario		37.5M High Fleet Scenario	
	kg/day	tons/year	kg/day	tons/year
Preferred Alternative - All Actions	909	366	870	350
No Action Alternative	1,112	447	1,094	440

(1) Includes aircraft sources, ground service equipment, on-site motor vehicles, and other miscellaneous sources. (See Appendix M of the Airside Project Draft EIS/EIR for individual sources.)

(2) Odor-causing VOCs were not included in the *1997 Annual Update.*

Figure 6.4-5
Odor-causing VOC Emissions Inventory – All Sources (ton/year)



PM_{10} Emissions

Aircraft are considered to be the predominant source of particulate emissions, representing roughly 90 percent of the Logan Airport total. Ground service equipment and motor vehicles comprise most of the remaining 10 percent. Notably, particulate matter emission factors for aircraft are not well known. The few studies that exist are generally for military aircraft. Fractionation profiles, which would allow calculation of emissions inventories for PM_{10} and $PM_{2.5}$,do not exist for aircraft emissions of particulate matter. The LDMS uses the few emission factors that do exist and classifies all particulate matter as PM_{10}.

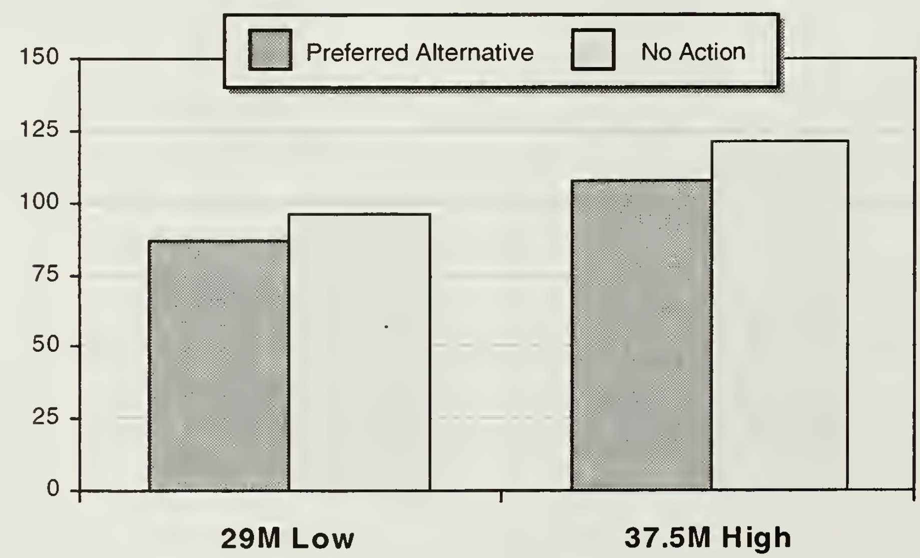
As shown in Table 6.4-8 and Figure 6.4-6, emissions of particulate matter are expected to increase in future years in connection with the forecasted increase in aircraft operations at Logan. However, the amounts associated with the Preferred Alternative are lower than those associated with the No Action Alternative. It is also noteworthy that this analysis does not take into full account the reduction in particulate emissions expected with the newer, more efficient aircraft engines. PM emissions are not included in the *1997 Annual Update* emissions inventories.

Table 6.4-8
PM_{10} Emissions Inventory - All Sources [1,2,3]

Alternative	29M Low Fleet Scenario		37.5M High Fleet Scenario	
	kg/day	tons/year	kg/day	Tons/year
Preferred Alternative - All Actions	217	87	268	108
No Action Alternative	238	96	301	121

1. Includes aircraft sources, ground service equipment, on-site motor vehicles, and other miscellaneous sources. (See Tables EI1-4, EI2-4, EI3-4, and EI4-4 in Appendix M of the Airside Project Draft EIS/EIR for individual sources).
2. PM emissions are not included in the *1997 Annual Update*.
3. Assumes all PM emissions are PM_{10}.

Figure 6.4-6
PM_{10} Emissions Inventory – All Sources (ton/year)



Off-Site Motor Vehicle Emissions

For the purposes of this assessment, off-site motor vehicle emissions are attributable to passenger, employee, and cargo transport vehicles traveling to and from Logan Airport on the local and regional roadway network. As discussed previously, the basis, data, and methods used to develop this analysis were obtained from the *1994/1995 GEIR.*

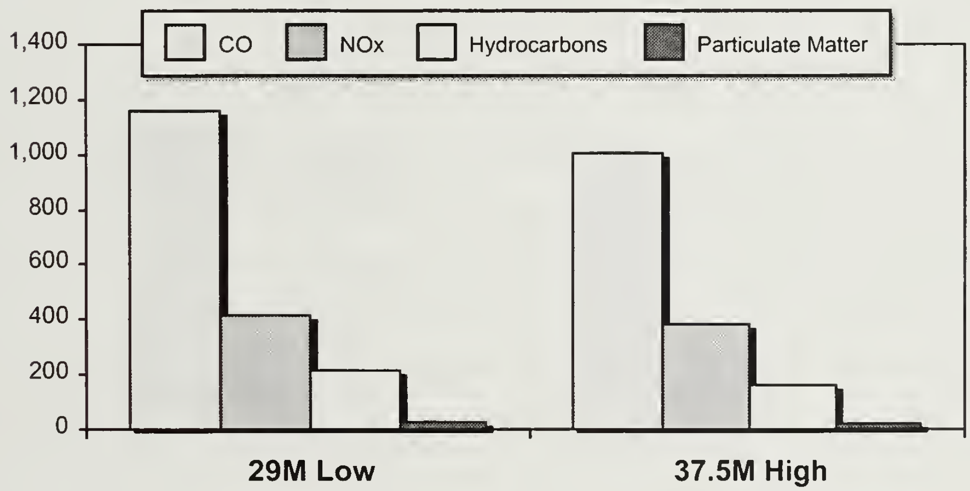
The results of the off-site motor vehicle emissions inventory are summarized in Table 6.4-9 and illustrated in Figure 6.4-7. As shown, emissions of CO, NOx, VOCs, and particulate matter (PM) are expected to decline over the long term. This reduction is largely attributable to the federal motor vehicle emissions control program that mandates the development of more fuel efficient, cleaner-burning motor vehicles nationwide. Part of the reduction is also associated with DEP programs designed to reduce motor vehicle emissions statewide.

Table 6.4-9
Off-Site Motor Vehicle Emissions (1)

Pollutant	Near Term 29M Low Fleet Scenario		Long Term 37.5M High Fleet Scenario	
	kg/day	tons/year	Kg/day	tons/year
CO	2,883	1,160	2,506	1,008
NO_2	1,027	413	948	381
VOCs	526	212	401	161
PM	60	24	41	17

(1) Includes airport-related motor vehicles in the East Boston and Regional Study Areas.

Figure 6.4-7
Off-Site Motor Vehicle Emissions Inventory (tons/year)



6.4.2.2 Dispersion Modeling Results

As previously discussed, ambient (outdoor) levels of air pollutants were predicted at 12 community sites (called receptors) using the LDMS. In this way, the impacts of the No Action Alternative and the Preferred Alternative can be individually assessed in each neighborhood and the results can be compared directly to state and federal air quality standards or guidelines.

The dispersion modeling results for the No Action Alternative and the Preferred Alternative under the 29M Low and 37.5M High Fleet scenarios are discussed below. For ease in assimilating these findings, only the highest levels predicted at all 12 receptors are reported. The assumption is that pollutant levels at the 11 other receptors will be less by comparison. Exceptions to this reporting technique are the reported ozone and odor indicator levels, which are given as spatially averaged values.

The 1993 Modeled Historic Condition dispersion model results were presented in Section 5.4.3.2. Dispersion modeling is not included in the *1997 Annual Update* air quality analyses.

29M Low Fleet Scenario Dispersion Model Results

As shown in Table 6.4-10, the highest predicted levels of CO, NO_2, and PM_{10} are expected to be well within the air quality standards and guidelines for these pollutants. A comparison of the No Action Alternative and the Preferred Alternative indicates that the Preferred Alternative results in lower concentrations of CO (1- and 8-hour), NO_2 (1-hour), and the ozone/odor indicators. For NO_2 (annual) and PM_{10} (24-hour and annual), there is no difference between the No Action Alternative and the Preferred Alternative results. Because of the relative similarity of these results overall, there should be no discernable differences in ambient air quality conditions at any of the receptors under either Alternative.

Table 6.4-10
29M Low Fleet Scenario Dispersion Model Results Summary

	Community Air Concentration(µg/m³)		Air Quality Standard
Pollutant/Parameter	Preferred Alternative	No Action Alternative	(µg/m³)
CO, 1-hour, highest 2nd high	5,676	6,002	40,000
CO, 8-hour, highest 2nd high	2,734	2,808	10,000
NO_2, 1-hour, highest 2nd high	255	263	320
NO_2, annual, highest	55	55	100
PM_{10}, 24-hour, highest 2nd high	48	48	150
PM_{10}, annual, highest	24	24	50
Ozone indicator, Total VOC, 24-hour, spatially-averaged highs	16	18	N/A
Odor indicator, Aircraft idle Mode VOC, 1-hour, spatially-averaged highs	90	96	N/A

N/A Not applicable as it is used as an indicator of potential ozone formation and is not comparable to any standard.

37.5M High Fleet Scenario Dispersion Model Results

As shown in Table 6.4-11, under this scenario the highest predicted levels of CO, NO_2, and PM_{10} are again well within the air quality standards and guidelines. When comparing the results between the No Action Alternative and the Preferred Alternative, there are still no significant differences for any of the pollutants.

Based on the results of the emissions inventories and the dispersion modeling, the following findings on the effects of the Airside Project are evident: (1) there are no predicted violations of any state and federal standards or guidelines under any future scenarios or Alternatives; and (2) the overall impacts associated with the Preferred Alternative are beneficial or the same when compared to the No Action Alternative.

Results of Air Quality Impact Analyses

To comply with the Clean Air Act Amendments of 1990 (CAAA) and the NEPA, FAA has made the following findings for project-related air quality impacts.

Because the proposed action is located in an ozone non-attainment area, the FAA must determine if the proposed action is consistent with the state implementation plan (SIP). General Conformity requirements mandated by Section 176(c) of the CAAA require the FAA to do so. To make this determination, FAA must compare the emissions resulting from the Preferred Alternative against those emissions that would have occurred under the No Action scenario.

Table 6.4-11
37.5M High Fleet Scenario Dispersion Model Results Summary

	Community Air Concentration ($\mu g/m^3$)		Air Quality Standard
Pollutant/Parameter	Preferred Alternative	No Action Alternative	($\mu g/m^3$)
CO, 1-hour, highest 2nd high	5,743	5,798	40,000
CO, 8-hour, highest 2nd high	2,792	2,844	10,000
NO_2, 1-hour, highest 2nd high	282	275	320
NO_2, annual highest	56	56	100
PM_{10}, 24-hour, highest 2nd high	48	49	150
PM_{10}, annual highest	24	24	50
Ozone indicator, Total VOC, 24-hour, spatially-averaged highs	18	20	N/A
Odor indicator, Aircraft idle mode VOC, 1-hour, spatially-averaged highs	115	119	N/A

N/A Not applicable as it is used as an indicator of potential ozone formation and is not comparable to any standard.

Based on the analyses of NOx and VOCs (Tables 6.4-5 and 6.4-6, respectively), FAA has determined that the proposed project's net annual emissions (Preferred Alternative emission levels minus No Action Alternative emissions) will be less than the applicable NOx and VOC emission levels in 40 CFR 93.153(b) for all future conditions analyzed. In addition, FAA analysis of these levels shows that the Preferred Alternative would not be "regionally significant" because it would not cause 10 percent of the total emissions inventories for NOx or VOC in the Boston ozone nonattainment area. Accordingly, FAA has determined that the Project is presumed to conform to the SIP in accordance with Section 176 (c) of the CAAA.

For NEPA purposes, FAA must also assess the air quality impacts of Project Alternatives under consideration. FAA completed dispersion modeling for the Preferred Alternative and for the No Action Alternative. Analysis of Table 6.4-11 clearly shows that the proposed project would not exceed any NAAQS. Accordingly, FAA has determined that the Preferred Alternative would not cause significant air quality impacts.

6.4.3 Comparison of the Logan Dispersion Modeling System and Emissions and Dispersion Modeling System

As stated previously, since the completion of the scope of work for the Airside Project Draft EIS/EIR, the FAA's EDMS has become the required model for aviation sources Airside Project Draft EIS/EIR. In order to provide assurance that the LDMS provides results similar to EDMS, a comparison of the two models was conducted for the Preferred Alternative under the 29M Low Fleet scenario. This analysis indicates that the choice of model would not affect the outcome of the air quality assessment.

Both EDMS and LDMS have two components: an emissions inventory calculation and a dispersion model. The emissions inventory methodology for both models is very similar, with emission factors being multiplied by the number of aircraft operations, engines, and operating duration for each mode. The emission factors in LDMS were obtained from the FAA Engine Emission Database (FAEED), which is also the source of many emission factors in EDMS. Notably, EDMS does not contain emission factors for aircraft-generated PM_{10}, and LDMS does not have emission factors for oxides of sulfur. Because of their parallels, the emission factors in the two models are comparable. The principal difference in the emissions inventory portion of the two models is the treatment of times-in-mode. LDMS allows the user to input Logan-specific times-in-mode for all modes of operation, based on the output of Logan-specific airport operational models. EDMS, however, allows the user to input only taxi/idle time and automatically calculates times-in-mode for approach, takeoff, and climbout based on the mixing height. The emissions inventories calculated by the two models are compared in Table 6.4-12.

Table 6.4-12
Preferred Alternative 29M Low Fleet Scenario
Emissions Inventory Comparison

Pollutant	EDMS		LDMS	
	kg/day	Tons/year	kg/day	tons/year
CO	15,143	6,092	13,022	5,239
VOCs (1)	1,963	790	2,350	945
NOx	7,198	2,896	5,362	2,157
SO_x	538	216	N/A	N/A
PM_{10} (2)	90	36	217	87

N/A - not applicable
(1) Hydrocarbon emissions calculated in EDMS are being used to represent VOCs in this comparison.
(2) PM_{10} emission factors for aircraft are not included in EDMS. Therefore, the PM-10 total for EDMS includes GSE, motor vehicles and stationary sources, but not aircraft.

As shown in the table, EDMS projects higher total emissions of CO and NOx, while estimating lower emissions of VOCs and PM_{10} emissions than LDMS. These differences would be carried across all Alternatives and scenarios if they were modeled using EDMS. Importantly, the relationship of the Alternatives to each other is not expected to be greatly affected by the choice of model. In other words, the Preferred Alternative will be associated with the lowest amount of emissions among the Alternatives, and the No Action Alternative will be associated with the highest emissions, regardless of the model used.

The second element of the two models is dispersion evaluation. LDMS uses the model ISCST3 (Industrial Source Complex Short-Term), a Gaussian plume dispersion algorithm. ISCST3 is an EPA-preferred model for a variety of reasons. It has the ability to treat point, area, line, and volume sources; deposition; downwash; and plume rise. The dispersion component in EDMS uses EPA's PAL2 (Point Area and Line) and CALINE3 (California Line Source), which are also Gaussian plume models. Both LDMS and EDMS have the ability to incorporate actual meteorological data. There are inherent differences among the algorithms in the two models, but the use of Gaussian plumes in both models leads to similarities in results. The results of the EDMS dispersion analysis of the Preferred Alternative under the 29M Low Fleet scenario are shown in Figures 6.4-8 through 6.4-10 and compared to the LDMS results. Complete dispersion modeling results are in Appendix F.

Figure 6.4-8
CO Dispersion Comparison (Second Highest Level)

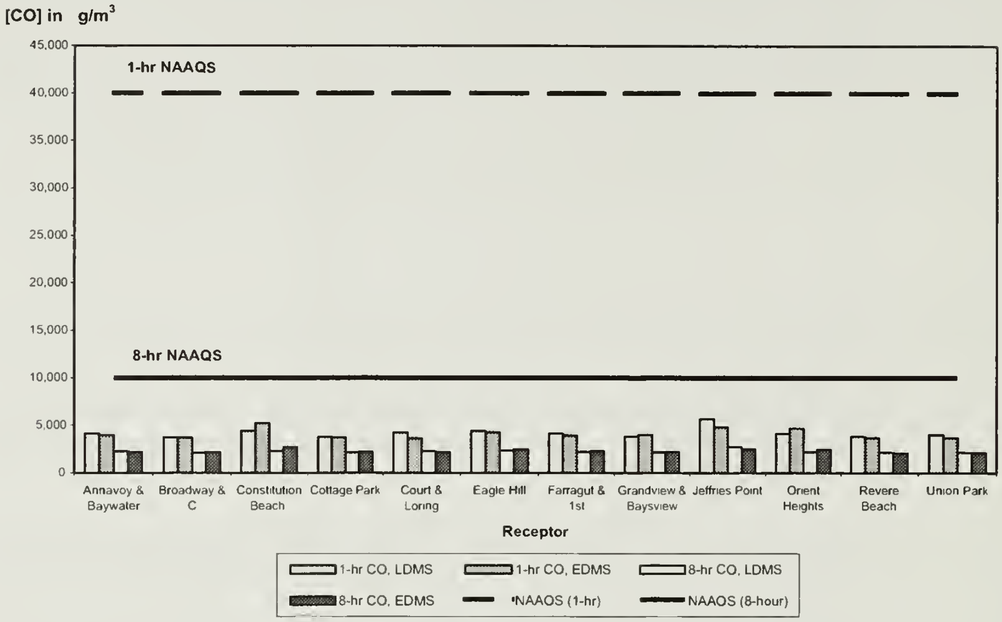


Figure 6.4-9
NO_2 Dispersion Comparison (Highest Annual Mean and Second Highest 1-Hour Level

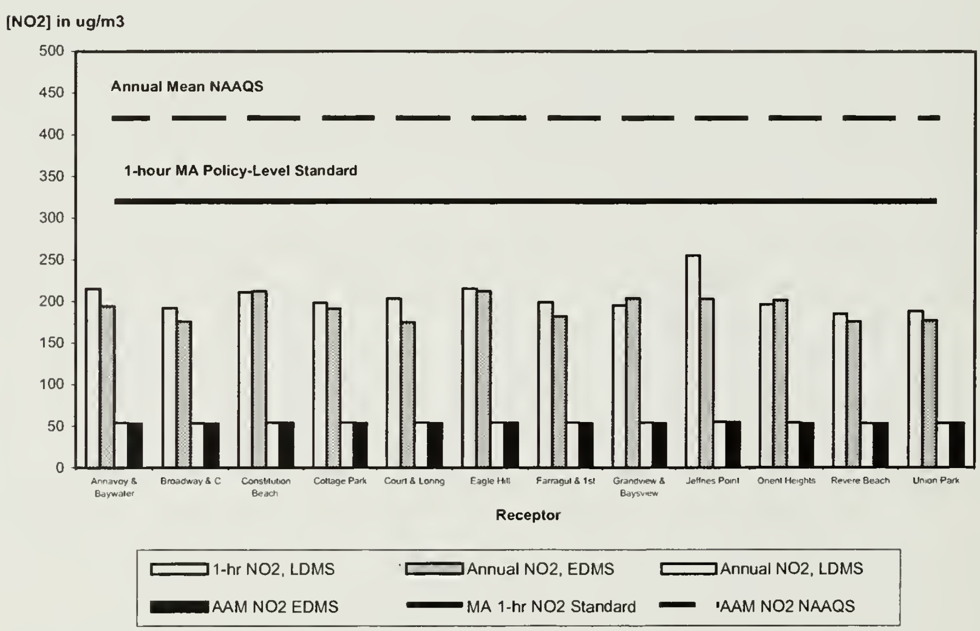
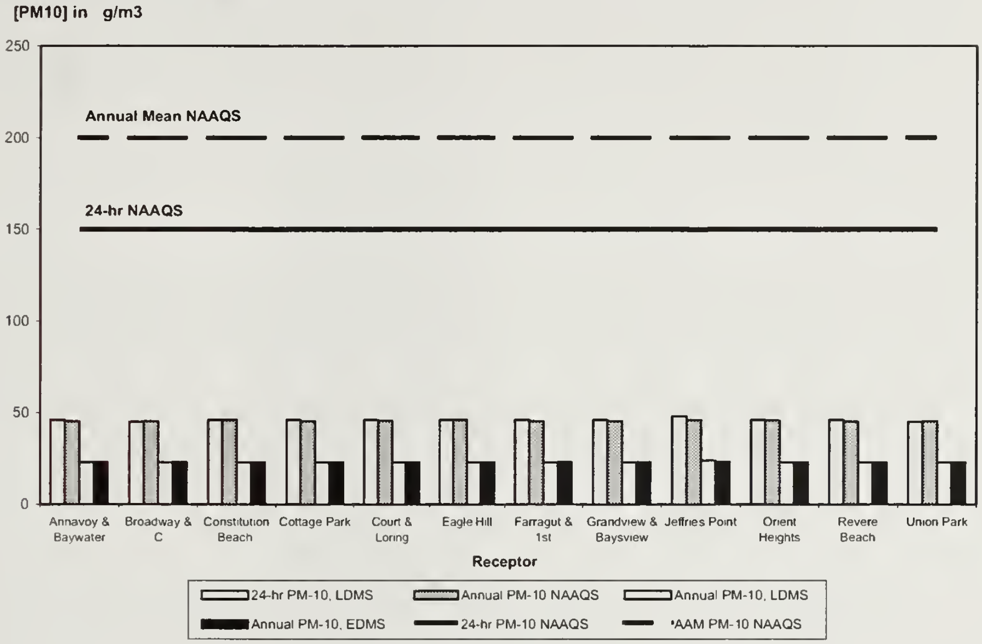


Figure 6.4-10
PM_{10} Dispersion Comparison
Highest Annual Mean and Second Highest 24-Hour Level



As shown in the figures, the two models have similar results. The predicted concentrations are, on average, two percent higher with LDMS. The higher results generated by LDMS mean that this model is, in general, conservative. The only exception to the conservative nature of LDMS is with CO concentrations for an eight-hour averaging time, which are two percent higher, on average, with EDMS. Nonetheless, all concentrations are well within the NAAQS for all modeled pollutants with either model. The variation between modeled concentrations at each receptor can likely be attributed to differences in the nuances of the modeling algorithms as well as inevitable variance in the manner of user input (e.g., time-in-mode, as mentioned previously).

Although EDMS and the LDMS have somewhat different components, their methodologies and, more importantly, their results are similar. The comparison of the two conducted for this analysis indicates that if all emissions inventories were prepared with EDMS, all action alternatives including the Preferred Alternative would still result in air quality benefits, when compared to the No Action Alternative. Furthermore, the dispersion modeling shows that results of the two models are comparable, and that there are no modeled violations of the NAAQS.

6.4.4 Air Quality Results for the 37.5M High RJ Fleet

The air quality analysis has been updated since the Airside Project Draft EIS/EIR to reflect an additional long-term planning forecast of aircraft operations and fleet mix at Logan. To estimate the scope of impacts associated with these revisions, the LDMS was applied to the Preferred Alternative and the No Action Alternative. The methodology for this analysis is consistent with that used for the Airside Project Draft EIS/EIR modeling efforts, with changes made only to the aircraft, auxiliary power units, and GSE. The emissions inventory and dispersion modeling results are presented in this section.

6.4.4.1 Emissions Inventory Results

The additional 37.5M High RJ Fleet forecast for Logan Airport produced the need to amend the emissions associated with aircraft, auxiliary power units, and GSE. The other emissions sources, however, have been analyzed previously and are not re-calculated here. Previous estimates for these sources (e.g., motor vehicles and stationary sources) are not expected to change for the 37.5M High RJ Fleet forecast.

CO Emissions

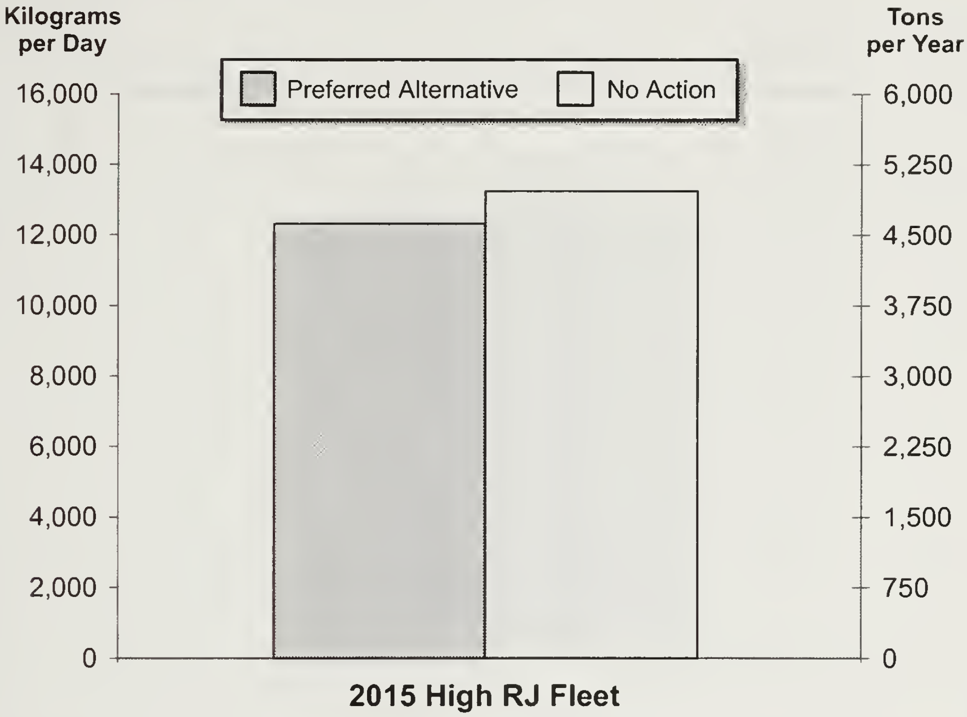
CO emissions will decrease in the future as a result of several factors: cleaner-burning Stage 3 aircraft, tighter motor-vehicle emissions controls, and alternative fuels in GSE. However, these decreases will be partially offset by the forecasted increase in aircraft operations at Logan Airport over time. As shown in Table 6.4-13 and Figure 6.4-11, the Preferred Alternative is expected to generate a lower amount of total CO emissions, when compared to the No Action Alternative, at all forecasted enplanement and operational levels. This emissions reduction is largely attributable to improved airfield operating efficiencies associated with the Preferred Alternative.

Table 6.4-13
CO Emissions Inventory - All Sources (1)

Alternative	37.5M High RJ Fleet Scenario	
	kg/day	tons/year
Preferred Alternative - All Actions	12,322	4,958
No Action Alternative	13,253	5,332

Includes aircraft sources, GSE, on-site motor vehicles, and other miscellaneous sources.
(See Appendix M of the Airside Project Draft EIS/EIR and Appendix F of this Supplemental DEIS/FEIR for individual sources.)

Figure 6.4-11
CO Emissions Inventory – All Sources



NOx Emissions

Aircraft are projected to continue to represent the primary source of NOx emissions at Logan, generating approximately 78 percent of the total under either the Preferred Alternative or the No Action Alternative. GSE, the central heating/cooling plant and motor vehicles represent roughly 11, 8, and 3 percent of the total, respectively. NOx emissions from all sources other than motor vehicles are expected to increase in future years.

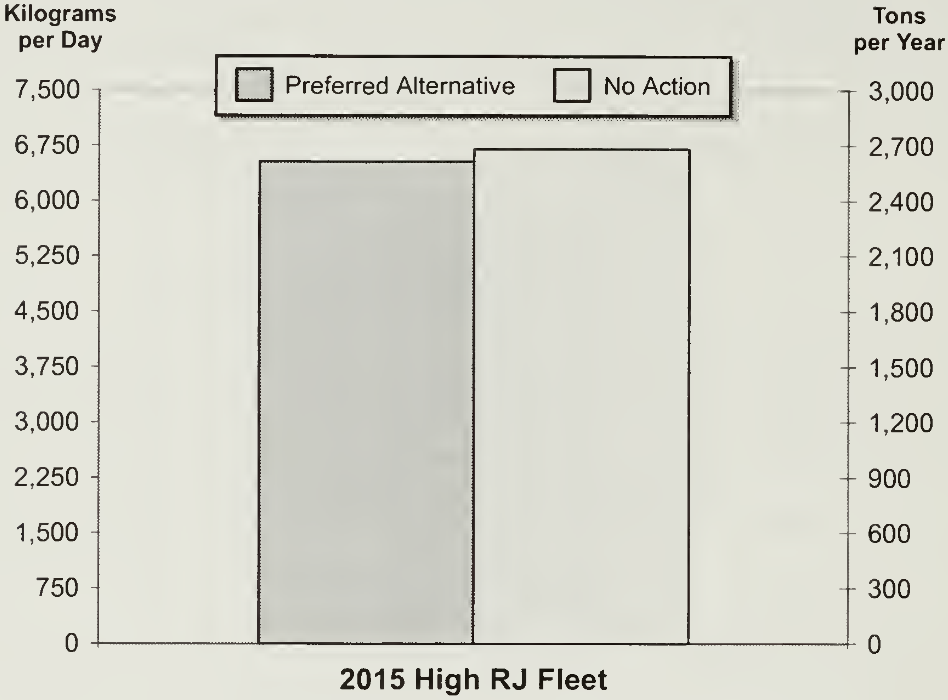
As shown in Table 6.4-14 and Figure 6.4-12, the Preferred Alternative is predicted to emit a smaller amount of NOx than the No Action Alternative. The improvements in the Preferred Alternative would help offset the rate of NOx increase associated with Stage 3 aircraft and the growth in aircraft operations by improving airfield efficiency and shortening delay periods.

Table 6.4-14
NOx Emissions Inventory - All Sources (1)

Alternative	37.5M High RJ Fleet Scenario	
	kg/day	tons/year
Preferred Alternative – All Actions	6,531	2,628
No Action Alternative	6,703	2,697

Includes aircraft sources, GSE, on-site motor vehicles, and other miscellaneous sources.
(See Appendix M of the Airside Project Draft EIS/EIR and Appendix F of this Supplemental DEIR/FEIR for individual sources.)

Figure 6.4-12
NOx Emissions Inventory – All Sources



Total VOC Emissions

As with previous analyses in support of the Draft EIS/Final EIR, VOCs are considered an O3 indicator in this analysis. The three primary sources of total VOCs at Logan Airport are projected to be fuel storage and handling, GSE, and aircraft.

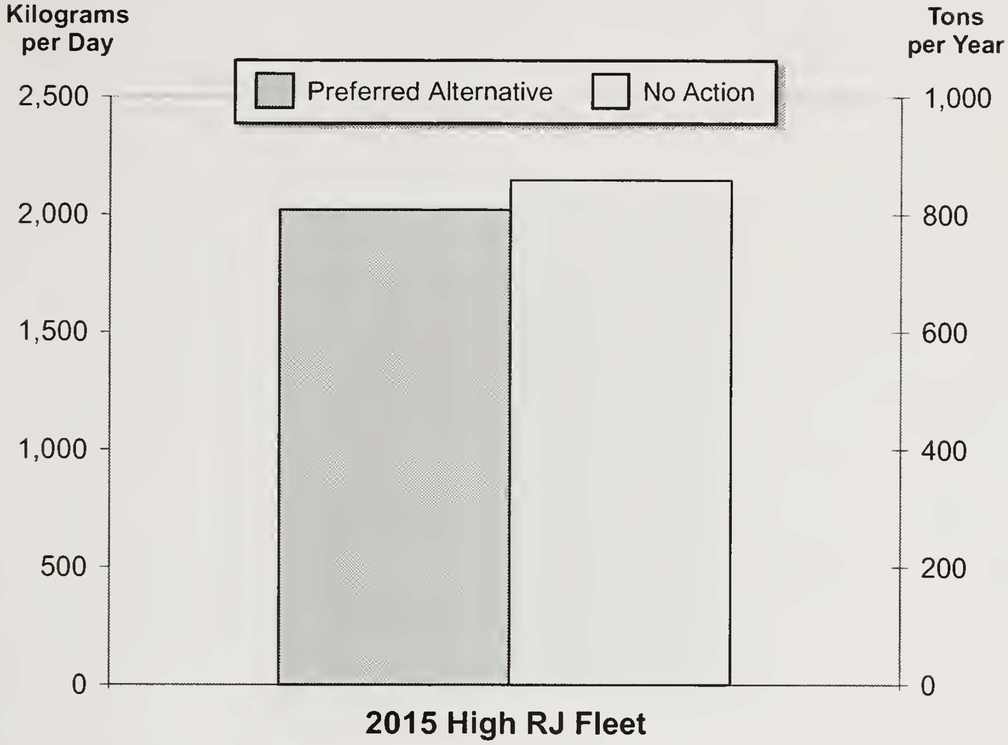
As shown in Table 6.4-15 and Figure 6.4-13, total VOC emissions are predicted to decrease over time, primarily as a result of the lower-VOC profiles associated with the High RJ Fleet. The Preferred Alternative is expected to generate a lower amount of VOCs than the No Action Alternative. This outcome is largely attributable to improved airfield efficiency and shorter delay periods associated with the Preferred Alternative.

Table 6.4-15
Total VOC Emissions Inventory - All Sources (1)

Alternative	37.5M High RJ Fleet Scenario	
	kg/day	tons/year
Preferred Alternative – All Actions	2,019	812
No Action Alternative	2,147	864

Includes aircraft sources, GSE, on-site motor vehicles, and other miscellaneous sources.
(See Appendix M of the Airside Project Draft EIS/EIR and Appendix F of this Supplemental DEIR/FEIR for individual sources.)

Figure 6.4-13
Total VOC Emissions Inventory – All Sources



Odor-causing Emissions

The portion of VOC emissions associated with aircraft low power operations are considered to be indicative of odors, and this emissions category follows the same patterns as those described above for total emissions of VOCs. In other words, odor-related VOCs are expected to decrease over time and be lower with the Preferred Alternative than with the No Action Alternative, as shown in Table 6.4-16 and Figure 6.4-14.

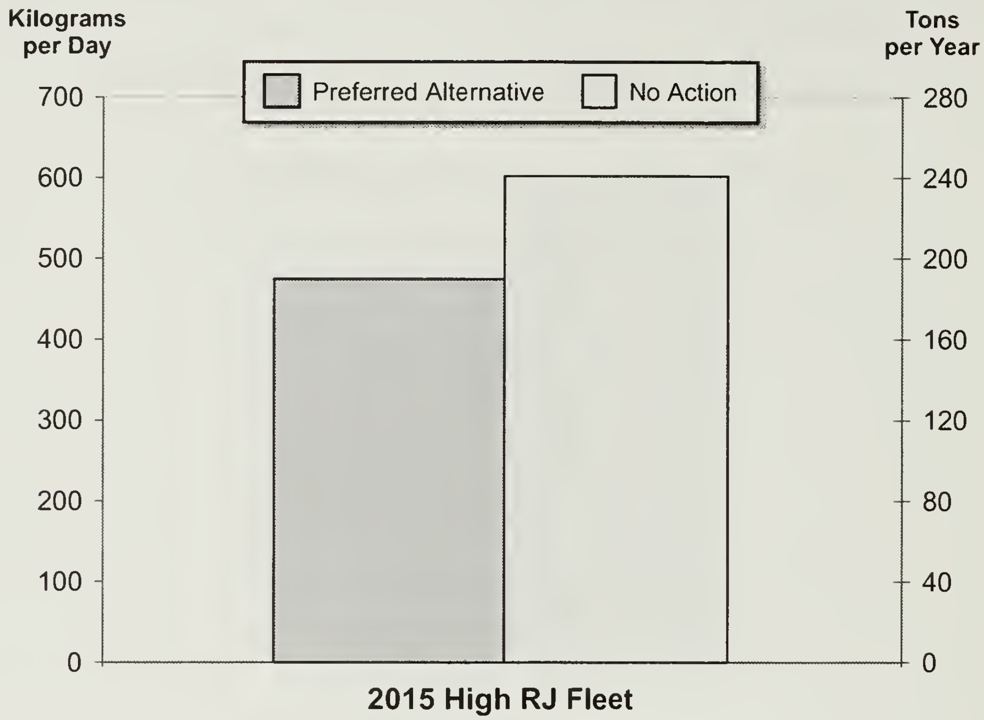
This predicted reduction in odor-causing VOCs is attributable to the aircraft fleet and to improved airfield operating conditions and reduced aircraft delay periods associated with the individual Alternatives.

Table 6.4-16
Odor-causing VOC Emissions Inventory - All Sources[1]

Alternative	37.5M High RJ Fleet Scenario	
	kg/day	tons/year
Preferred Alternative - All Actions	475	191
No Action Alternative	602	242

Includes aircraft sources, GSE, on-site motor vehicles, and other miscellaneous sources.

Figure 6.4-14
Odor-causing Emissions Inventory – All Sources



PM_{10} Emissions

This analysis is based on the LDMS, which uses the few available data for PM_{10} emitted from aircraft. Aircraft are projected to remain the predominant source of particulate emissions, with GSE, miscellaneous sources, and motor vehicles accounting for roughly 5 percent each.

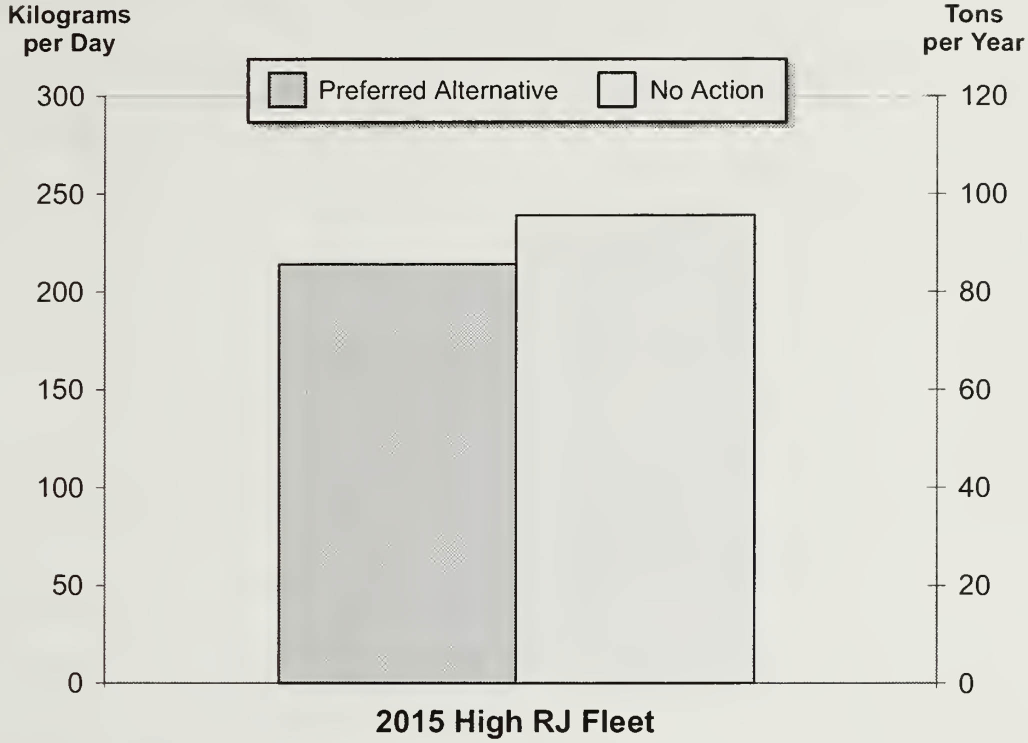
As shown in Table 6.4-17 and Figure 6.4-15, emissions of particulate matter are expected to decrease in future years, a result of decreases from all sources other than miscellaneous sources. In addition, the amounts associated with the Preferred Alternative are lower than those associated with the No Action Alternative.

Table 6.4-17
PM_{10} Emissions Inventory - All Sources [1,2,]

Alternative	37.5M High RJ Fleet Scenario	
	kg/day	tons/year
Preferred Alternative	214	86
No Action Alternative	239	96

(1) Includes aircraft sources, GSE, on-site motor vehicles, and other miscellaneous sources. (See Appendix M of the Airside Project Draft EIS/EIR and Appendix F in this Supplemental DEIS/FEIR for individual sources.)
(2) Assumes all PM emissions are PM_{10}.

Figure 6.4-15
PM_{10} Emissions Inventory – All Sources (ton/year)



6.4.4.2 Dispersion Modeling Results

As with previous analyses, ambient levels of air pollutants were predicted at 12 receptors using the LDMS to asses the impacts of the project alternatives in each neighborhood and to compare the results air quality standards and guidelines. These receptors are shown in Figure 5.4-1.

The dispersion modeling results are discussed below, with the highest levels of CO, NOx, and PM_{10} predicted at any one receptor. The assumption is that pollutant levels at the 11 other receptors will be lower than this highest reported value. The reported ozone and odor indicator levels, which are regional in nature, are given as spatially averaged values.

As shown in Table 6.4-18, the highest predicted levels of CO, NO_2, and PM_{10} are expected to be well within their respective air quality standards and guidelines. Between the Preferred Alternative and the No Action Alternative, the lowest pollutant concentrations generally occur under the Preferred Alternative.[10,11] Because of the relative similarity of these results overall, there should be no discernable differences in ambient air quality conditions at any of the receptors under either Alternative.

10 The maximum concentrations of PM10 are less than 1 µg/m3 lower under the Preferred Alternative than under the No Action Alternative.
11 The 1-hour NO2 level is the only exception to this statement in that the highest level under the Preferred Alternative is slightly higher than the highest level under the No Action Alternative.

Table 6.4-18
37.5M High RJ Fleet Scenario Dispersion Model Results Summary

Pollutant/Parameter	Community Air Concentration ($\mu g/m^3$)		Air Quality Standard ($\mu g/m^3$)
	Preferred Alternative	No Action Alternative	
CO, 1-hour, highest 2nd high	6,104	6,125	40,000
CO, 8-hour, highest 2nd high	2,884	2,928	10,000
NO_2, 1-hour, highest 2nd high	290	279	320
NO_2, annual, highest	55	56	100
PM_{10}, 24-hour, highest 2nd high	48	48	150
PM_{10}, annual, highest	24	24	50
Ozone indicator, Total VOC, 24-hour, spatially averaged highs	16	17	N/A
Odor indicator, Aircraft idle Mode VOC, 1-hour, spatially averaged highs	108	111	N/A

N/A Not applicable as it is used as an indicator of potential ozone or odor formation and is not comparable to any standard.

The emissions inventory and dispersion modeling for the 37.5M High RJ Fleet show that there are no predicted violations of any state and federal standards or guidelines under any future scenarios or Alternatives, and that the overall impacts associated with the Preferred Alternative are either beneficial or imperceptible, when compared to the No Action Alternative.

6.5 Biotic Communities

Biotic community impacts include impacts to terrestrial vegetation, wetlands, wildlife, and rare species.

6.5.1 Terrestrial Vegetation

Construction of the runway and taxiway improvement components of the Preferred Alternative will require the conversion of areas of existing upland vegetation to paved surfaces. As described in Section 5.5.1, these vegetated areas generally consist of mowed grasses. In addition, both reconfiguration of the Southwest Corner Taxiway System and construction of Runway 14/32 would convert areas of existing pavement to vegetation. As shown in Table 6.5-1 below, construction of the Preferred Alternative results in the net conversion of 37.6 acres of vegetation to paved area.

Conversion of the vegetated infield areas will reduce the pervious surface area of the airfield and reduce available habitat for resident and transient species. For most of the species occurring on the airfield, the loss of available habitat will not constitute a significant adverse impact. However, portions of the airfield to be converted from grassed upland to paved surface are used by the upland sandpiper (*Bartramia longicauda*) for breeding and nesting. Impacts to this state-listed endangered species are described in Section 6.5.5.

Table 6.5-1
Summary of Airfield Vegetation Impacts

Improvement Concept	Conversion of Vegetation to Paved Area	Conversion of Paved Area to Vegetation	Net Change of Vegetation
Runway 14/32	16.1 acres	13.4 acres	-2.7 acres
Centerfield Taxiway:			
▪ North Section	16.8 acres	-	- 30.1 acres
▪ South Section	13.3 acres	-	
Extend Taxiway Delta	7.5 acres	-	- 7.5 acres
Taxiway November Realignment	5.3 acres	6.9 acres	+1.6 acres
Southwest Corner Taxiway System Reconfiguration	5.0 acres	6.1 acres	+ 1.1 acres
Total Change of Vegetation			**-37.6 acres**

Source: HNTB, 1999

6.5.2 Wetlands

As described in Section 5.5, the perimeter of the airfield is located within the 100-foot buffer zone of a coastal bank as regulated under the Massachusetts Wetlands Protection Act and associated regulations (310 CMR 10.00 et. seq.). Portions of the buffer zone will be re-graded and vegetated for use as a runway safety area or object free areas for the unidirectional Runway 14/32 (all layout options). The overall linear distance of the buffer, adjacent to which the unidirectional Runway 14/32 will be constructed, is approximately 7,200 feet. The Runway itself will be 5,000 linear feet long, with a 1,000-foot runway safety area at each end. Construction work, however, will not occur within the full area of the buffer zone over this entire length. These activities will be largely confined to areas landward of the existing perimeter road, which is generally located in the middle of the 100-foot buffer zone. Once re-graded, the disturbed areas will be stabilized with grasses common to the airfield. Portions of the buffer zone that are presently paved will be converted to grass. Construction of the runway and associated drainage system modifications are the only element of the improvements that may be subject to review under the MA Wetlands Protection Act.

Work within the buffer zone required to construct the runway will not alter the coastal bank or its function in terms of either storm damage prevention or flood control.

6.5.3 Coastal Zone

Logan Airport is surrounded on three sides by Boston Harbor. This location is within an area designated by the Commonwealth as the Coastal Zone.

6.5.3.1 Coastal Zone Management Program

The Preferred Alternative will have no direct or indirect impact on resource areas, public access, water-dependent businesses, recreation, or other maritime interests in the coastal zone. The Preferred Alternative is consistent with the 27 policies (regulatory and non-regulatory) of Massachusetts Coastal Zone Management (CZM) program, as documented in the following sections.

6.5.3.2 Consistency with Coastal Zone Management Policies

In accordance with state and federal regulations, construction projects within the Coastal Zone must be consistent with the policies and principles established for these areas by the Massachusetts Office of Coastal Zone Management (MCZM).

Accordingly, a review of the Preferred Alternative within the context of the Massachusetts Coastal Zone Management Program Federal Consistency Review Procedures (301 CMR 21.00) was conducted for this Supplemental DEIS/FEIR. A summary of the Preferred Alternative's consistency with each of the four MCZM policies and principles that are relevant to this project is provided below. It is anticipated that a description of the project's consistency will be submitted to MCZM for Coastal Zone Consistency Determination and review during this Supplemental DEIS/FEIR review period.

Water Quality Policy 1

Ensure that point-source discharges in or affecting the coastal zone are consistent with federally approved state effluent limitations and water quality standards.

Consistency: Airfield stormwater is presently directed by overland flow to the existing airfield drainage system for discharge via a series of outfalls to Boston Harbor. Airfield discharges to the Harbor currently meet Class SB water quality standards. The existing drainage system will be extended to receive runoff from new impervious areas associated with taxiway and runway construction. No new outfalls are anticipated, nor is any change in the characteristics of the runoff expected. Accordingly, the Preferred Alternative will be consistent with federally approved state effluent limitations and water quality standards. Drainage from portions of the airfield totaling approximately 55 acres will be redirected from the West Outfall to existing outfalls along Boston Harbor. A low-flow stormwater quality treatment device may be installed, if feasible, to handle drainage from paved sections of this 55-acre airfield area.

Habitat Policy 1

Protect coastal resource areas including salt marshes, shellfish beds, dunes, beaches, barrier beaches, salt ponds, eelgrass beds, and fresh water wetlands for their important role as natural habitats.

Consistency: The Preferred Alternative will not directly affect any coastal resource areas. Shellfish beds and salt marsh found around the airfield perimeter will be unaffected.

Although the pollutant loading may increase slightly due to the increase in impervious surfaces and runoff, the quality of runoff from the airfield is expected to remain the same. There is no indication that airfield runoff has any adverse impact on these resource areas. This is evidenced by the fact that shellfishing areas around Logan Airport's perimeter have been reopened for commercial harvesting over the past decade.

Public Access Policy 1

Ensure that developments proposed near existing public recreation sites minimize their adverse effects.

Consistency: There are several public recreation areas close to the airport including Constitution Beach in East Boston and several of the Boston Harbor Islands. The Preferred Alternative will not change the use of the airport and no new impacts to public recreation sites are expected as a result of the Preferred Alternative.

Growth Management Principle 2

Ensure that state and federally funded transportation and wastewater projects primarily serve existing developed areas, assigning highest priority to projects that meet the needs of urban and community development centers.

Consistency: The Preferred Alternative may be funded through a combination of federal and state money. Logan Airport is an existing developed area and improvement of the facility will meet the needs of urban and community development centers.

6.5.3.3 Coastal Barriers

The Airside Project must show compliance with the Coastal Barriers Resources Act of 1982, which generally prohibits development on undeveloped coastal barriers along the Atlantic and Gulf Coasts, as identified by the U.S. Fish and Wildlife Service (USFWS). The project site is not within the boundaries of a Federally defined coastal barrier. Therefore, the Preferred Alternative will have no impact on coastal barriers as defined by the Coastal Barriers Resources Act of 1982.

6.5.4 Wildlife Habitat

As described above, the grasses and other herbaceous species occurring in the infield areas serve as habitat for a variety of birds and mammals. Conversion of these areas to paved surface will reduce available habitat areas. Upon the completion of construction and re-vegetation of disturbed areas under the Preferred Alternative, approximately 440 acres of vegetation will remain on the airfield. Consequently, proposed airside construction activities are not anticipated to result in modifications to the wildlife species composition of the Logan Airport airfield. Several of the infield areas currently serve as habitat for the upland sandpiper (*Bartramia longicauda*). Impacts to this state-listed endangered species are presented in Section 6.5.5, below.

6.5.5 Endangered and Threatened Species of Flora and Fauna

No Federal-listed endangered or threatened species are known to occur on the Logan Airport airfield. Accordingly, no impacts to federal-listed endangered or threatened species are anticipated with construction of the Preferred Alternative.

6.5.5.1 Impacts to State-Listed Species

The upland sandpiper, a state-listed endangered species, has been observed on the airfield in areas between runways and taxiways where improvements are proposed. Studies conducted in 1996 for this project identified one confirmed and three suspected nesting locations for the upland sandpiper, all in the infield areas between Runways 4L/22R and 4R/22L. The confirmed location was positioned in the infield area between Runways 4L/22R, 4R/22L and Taxiways Charlie and Foxtrot. All suspected nesting locations were identified to the north of Runway 33L/15R:

- Between the Runway and Taxiway Yankee;
- Between Runway 15L/33R and Taxiway Romeo; and
- Between Taxiway Romeo and Taxiway N-3.

Based on observations by the Massport Wildlife Control unit in 1999, it is predicted that the upland sandpiper would continue to use some of these infield areas as nesting habitat during the nesting season.

Construction of Centerfield Taxiway will generally bisect three of these areas (see Figure 3.1-1), avoiding disturbance of the area between Taxiway Romeo and N-3. Mitigation measures associated with these impacts are presented in Section 6.5.5.2

Specifically, impacts to confirmed and suspected upland sandpiper habitat, based upon field observations conducted in 1996, will be a maximum of approximately 37 acres. This represents the total area of existing mowed grassland that will be converted to paved area as a result of the construction of Centerfield Taxiway and the Taxiway Delta extension. Other areas of pavement will be added in areas that are not presently grassland and are not known to support upland sandpiper habitat. No grassland areas that are known to support upland sandpiper will be affected by construction of proposed unidirectional Runway 14/32. In addition to the direct loss of habitat, construction of the Centerfield Taxiway also will reduce the size of contiguous grasslands on either side of the Centerfield Taxiway. However, the remaining grassland areas will still be available as upland sandpiper habitat once construction is completed and the areas are revegetated.

6.5.5.2 Upland Sandpiper Mitigation Plan

Construction of the Centerfield Taxiway is proposed in mowed grassland areas of the airfield, which have been documented to support breeding and nesting habitat for the upland sandpiper (*Bartramia longicauda*), a state-listed endangered species. In addition, extension of Taxiway Delta also will be constructed in a mowed grassland area of the

airfield. Although no breeding or nesting habitat areas have been documented recently in areas to be affected by the Taxiway Delta extension, studies in 1990 conducted for the Central Artery/Tunnel project identified this location as potential habitat at that time.

Collectively, construction of the Centerfield Taxiway and the Taxiway Delta extension will result in the conversion of approximately 37 acres of existing grassland to paved surface. This conversion will eliminate this 37 acres as potential habitat for the upland sandpiper.

According to the MA Natural Heritage and Endangered Species Program (NHESP), proposed airside construction activities and the resultant loss of endangered species habitat constitute a "taking" as defined under the Massachusetts Endangered Species Act (MGL c.131A, MESA). In accordance with 321 CMR 10.04(3)(b), prior to a "taking, " a Conservation and Management Permit must be issued. Issuance of a Conservation and Management Permit is contingent upon demonstrating that: (1) "an insignificant portion of the local population will be impacted or no viable Alternative for the proposed project or activity exists; " and (2) "a conservation plan, submitted to and approved by the Director [Division of Fisheries and Wildlife], will be carried out that provides a long-term net benefit to the conservation of the local population of the impacted species." Coordination on the MESA process is handled by NHESP.

The following sections describe the project's compliance with elements of MESA and discuss mitigation measures proposed with the intent of providing a "long-term net benefit to the conservation of the local population of the impacted species." As described below, Massport has worked closely with NHESP in the development of the Conservation and Management Plan component of the mitigation program.

Impacts on the Local Population

There will be no direct project impacts to any upland sandpipers. This will be ensured through implementation of a two-part mitigation program. The first part of this program involves the enhancement of grassland habitat elsewhere on the airfield early in the construction season, prior to the spring arrival of the upland sandpiper population, to encourage the occupation of these areas, rather than construction areas. In addition, Massport will implement a rigorous pre-construction reconnaissance of the affected areas to ensure that no upland sandpipers remain in the area. Details of these mitigation elements are provided below as part of the proposed Conservation and Management Plan.

While the successful implementation of these two elements of the program will avoid direct impacts to individual birds, existing habitat areas will be disturbed and permanently lost as habitat. According to NHESP, this is considered to be an impact on the local population.

Alternatives for the Proposed Project

Construction of the taxiway improvements are directed at: (1) alleviating specific existing airfield layout deficiencies which result in taxiway congestion and delay; (2) improving overall airfield operating efficiency; and (3) enhancing safety.

In the context of MESA, Alternatives are considered to be project options that would avoid impact to the affected species. Because of the existing arrangement of runways and taxiways at Logan Airport and FAA siting requirements, opportunities to reconfigure or relocate taxiway improvements and still meet the project purpose and need do not exist. For example, there is no other location on the airfield to construct a north/south taxiway to serve Runways 4L/22R and 4R/22L. Its position between the runways is driven by FAA design criteria based upon the type of aircraft operations on the runways. Based on these design parameters, the taxiway must be offset a minimum of 400 feet from the centerline of either of the adjacent parallel runways. In addition, consideration was given to intersections with existing runways and avoidance of existing navigational equipment. As such, there is little opportunity to move the position of the Centerfield Taxiway in any manner that would significantly minimize impacts to upland sandpiper habitat.

Proposed Conservation and Management Plan

Insofar as impacts to upland sandpiper habitat have been identified and no viable Alternative for the proposed project exists, a Conservation and Management Plan has been developed to provide a long-term net benefit to the conservation of the local population of the upland sandpiper. It is important to understand that a primary consideration in development of the Plan is the continuation or enhancement of aviation safety. In this manner, the Plan strives to encourage the use of alternate areas on the airfield without encouraging new aviation hazards. Based on discussions and coordination with NHESP, the Plan is composed of three elements. These three elements involve:

- Alteration of existing airfield grassland mowing procedures to encourage upland sandpipers to use non-construction areas;
- Implementation of a pre-construction and an on-going pre-mowing upland sandpiper reconnaissance program; and
- Off-site mitigation.

Details of each of these plan elements follow.

Alteration of Existing Airfield Grassland Mowing Procedures

Previous studies and anecdotal observations indicate that upland sandpipers prefer areas of taller vegetation for nesting, commonly locating their nests within tufts of grass beneath the overhanging blades (Buss and Hawkins, 1939; Johnsgard, 1981; DeGraf and Rudis, 1986). While nests located in mowed fields have been reported, these sites were not regarded by any author as preferred habitat. Buss and Hawkins (1939) did report a

preference for loafing grounds with low tussocks and sparse vegetation no taller than the bird's back (approximately 9 inches). These reports are consistent with the observations made at Logan Airport in 1990 and 1996.

As described above, in maintaining the airfield, Massport's primary goal is aviation safety. With regard to avian species, this translates to an objective of discouraging flocking (e.g., starlings) and certain larger birds (e.g., gulls), which are a documented aviation hazard. The current infield management practice at Logan Airport consists of periodic mowing of all grassed areas in a rotation, such that continuous mowing is sufficient to maintain safe conditions throughout the growing season.

Safe conditions comprise vegetation heights and densities low enough to retard insect and rodent populations, and discourage feeding by bird species that present a threat to aviation safety. Since 1991, the FAA has recorded four documented upland sandpiper aircraft strikes. One of these events (Philadelphia, 11/30/92) was reported to have disrupted operation of one aircraft engine. More recently, an upland sandpiper aircraft strike involving a Delta 737 was documented at Logan Airport on August 13, 1997.

Over the past 3 to 4 years, the mowing rotation has begun with the cutting of perimeter areas, followed by mowing of the infield areas, with the area between Runways 4L/22R and 4R/22L mowed last. This sequence is followed specifically to avoid or minimize impacts to the upland sandpiper. When the areas between Runways 4L/22R and 4R/22L are mowed, maintenance personnel mark nest sites as they become aware of them and postpone mowing in their immediate vicinity until the end of the nesting season. In 1996, one confirmed and two suspected nesting areas were identified in this area. No other nesting areas on the airfield were found.

Following this mowing sequence, suitable nesting conditions remained between Runways 4L/22R and 4R/22L throughout much of the upland sandpipers' nesting period. Other areas of the airfield that were mowed earlier appear to have been not favored by the upland sandpiper.

Based on these findings and an understanding of the species' habits, it appears that the height of grasses at the initiation of nesting, rather than any specific location, is more critical for the selection of nest sites by the upland sandpiper. This suggests that with an alteration of the mowing sequence, other grassland areas of the airfield outside of high activity areas could serve as preferred nesting and breeding habitat.

Proposed Grassland Management Procedures

Both short-term and long-term mitigation measures are proposed relative to use of the airfield by upland sandpiper. Short-term measures will be implemented during construction of the Centerfield Taxiway and Taxiway Delta, while long-term measures will be integrated into Massport's continuing airfield maintenance program.

To encourage the use of alternate nesting areas for the upland sandpiper during periods of construction, the following management measures are proposed. Beginning in the spring prior to the start of construction (scheduled for 2002), the mowing schedule will be adjusted such that mowing begins in the area of the proposed Centerfield Taxiway, while designated alternate infield areas (between Taxiways Charlie and Foxtrot, and Charlie and Runway End 33L) remain unmowed until the end of the mowing rotation. Except as noted below, the area between Runway End 27 and Runway End 33L will not be placed in the mowing rotation until after the fledging of upland sandpiper chicks. This area has previously, but does not presently, support upland sandpiper nesting. In this area, prior to fledging, mowing will be limited to a perimeter strip directly adjacent to the runways and taxiways. These alternative nesting areas will provide greater protection to birds by reducing the likelihood of mortality, and may enhance reproductive success by providing a greater separation between nesting areas and active runways.

Post-construction, infield areas adjacent to the Centerfield Taxiway will once again be shifted to the end of the mowing rotation, consistent with existing practices. As always, however, the mowing sequence will depend upon wind and weather conditions, which dictate active runway usage. Two of the alternate infield areas will be mowed following mowing operations adjacent to Centerfield Taxiway. As part of the long-term management program, the infield area between Runway Ends 27 and 33L will only be mowed following upland sandpiper fledging. As is the current procedure, Massport preserves the right to amend the mowing protocol to meet operational requirements or if the proposed mowing schedule is found to compromise aviation safety. The NHESP would be notified prior to implementation of any long-term modifications of the mowing program.

Construction Period and Ongoing Grassland Reconnaissance

Prior to and during construction, a systematic reconnaissance will be conducted by Massport in all infield areas to be mowed throughout the nesting season to identify the locations of active nests. This search will focus on infield areas for which there is a historic record of upland sandpiper nesting. If active nests are encountered within other areas, these locations will be added to the areas to be checked. Once identified, nest areas will be marked in the field, and mowing in the vicinity postponed until after the fledging period. Through this process of active reconnaissance prior to mowing, there will be an additional level of protection for the local population over that which exists presently. Annually thereafter, bird reconnaissance will be conducted prior to mowing to provide a continued level of protection to breeding and nesting upland sandpipers.

Offsite Mitigation

While relocation of the existing population of upland sandpiper to other areas of the airfield is viable, enhancement of bird habitat at Logan Airport is not feasible due to the significant potential of increased aviation safety hazards and hazards to the birds. Such relocation does not constitute a "net benefit to the local population", and accordingly the NHESP directed Massport to consider off-site mitigation to supplement the on-site mitigation. NHESP has identified Eastern Massachusetts as the range of the upland sandpiper local population.

Massport has worked closely with the NHESP on a program to provide a net benefit to the local population of upland sandpiper. This program would fund the restoration of a parcel of previously high quality grassland habitat at Camp Edwards on the Massachusetts Military Reservation on Cape Cod. This area is on a portion of Camp Edwards known as the cantonment area.

The cantonment area, a former military parade ground, supported a substantial population of upland sandpiper as recently as the mid-1990's. Since that time, there has been a gradual succession of this site from grassland to that of scrub vegetation such as bayberry and larger woody vegetation, predominantly pitch pine and eastern red cedar. As a result, a substantial portion of the area has evolved into unsuitable upland sandpiper habitat, and that population had declined to only a few nesting pairs in 1999. Restoration of this area to grassland is fully consistent with the Massachusetts National Guard's (MNG) August 1999 *Draft Master Plan/Area-wide Environmental Impact Report.*

To restore this area to grassland, in particular Little Blue Stem grass (*Schizachyrium scoparium*), Massport would fund a program to remove all existing shrub and woody vegetation down to a height that can be maintained by MNG using their existing mowing equipment. Wood chips and accumulated debris from the vegetation clearing operation will be removed to an offsite location. Clearing would be scheduled between September 1st and April 30th to avoid impacts to breeding birds.

To ensure the success of this program, Massport would make a one-time payment to fund any necessary vegetation removal by MNG during the season following the initial removal to maintain the site as Upland Sandpiper habitat. If necessary, selected areas that had a dense overstory and limited groundcover would be reseeded using native seed stock. A Memorandum of Understanding (MOU) between Massport and MNG to ensure implementation of the program is anticipated.

It is also anticipated that the MNG will commit to a grassland management plan previously developed for the cantonment area by NHESP (*Rare Grassland Birds and Management Recommendations for Camp Edwards/Otis Air National Guard*, NHESP, 1995) once Massport has funded restoration of the area.

In general, the NHESP grassland management plan presents the following recommendations to maintain or enhance habitat for rare grassland birds in the cantonment area at Camp Edwards:

- Restrict mowing between May and July to protect nesting and breeding birds
- Periodically mow areas to provide a diversity of grass height (3-12") and prevent encroachment of woody vegetation
- Restrict use of the area during the breeding season

In the event that such a restorations program at Camp Edwards is not possible, an appropriate alternative program, agreeable to the NHESP, will be developed and implemented.

6.6 Water Resources

The anticipated construction and operation impacts of the Preferred Alternative with regard to water resources are described in the following sections. Construction of the airside taxiway and/or runway improvements comprising the Preferred Alternative will change the total area of impervious surface on the airfield. Although there will be a net increase airfield-wide in impervious surface with all build Alternatives, there will be a net gain in pervious/grassed areas in several of the airfield subdrainage areas due to the removal of pavement in some areas. The addition of impervious area will result in a slight increase in the peak volume of runoff to Boston Harbor. Through the use of grassed swales and infiltration and low-flow stormwater quality treatment devices, increases in peak discharges will be minimized. Since fueling and maintenance do not occur on areas of the airfield where construction is proposed, a change in the quality of the runoff is not anticipated.

6.6.1 Volumetric Impacts to Water Resources

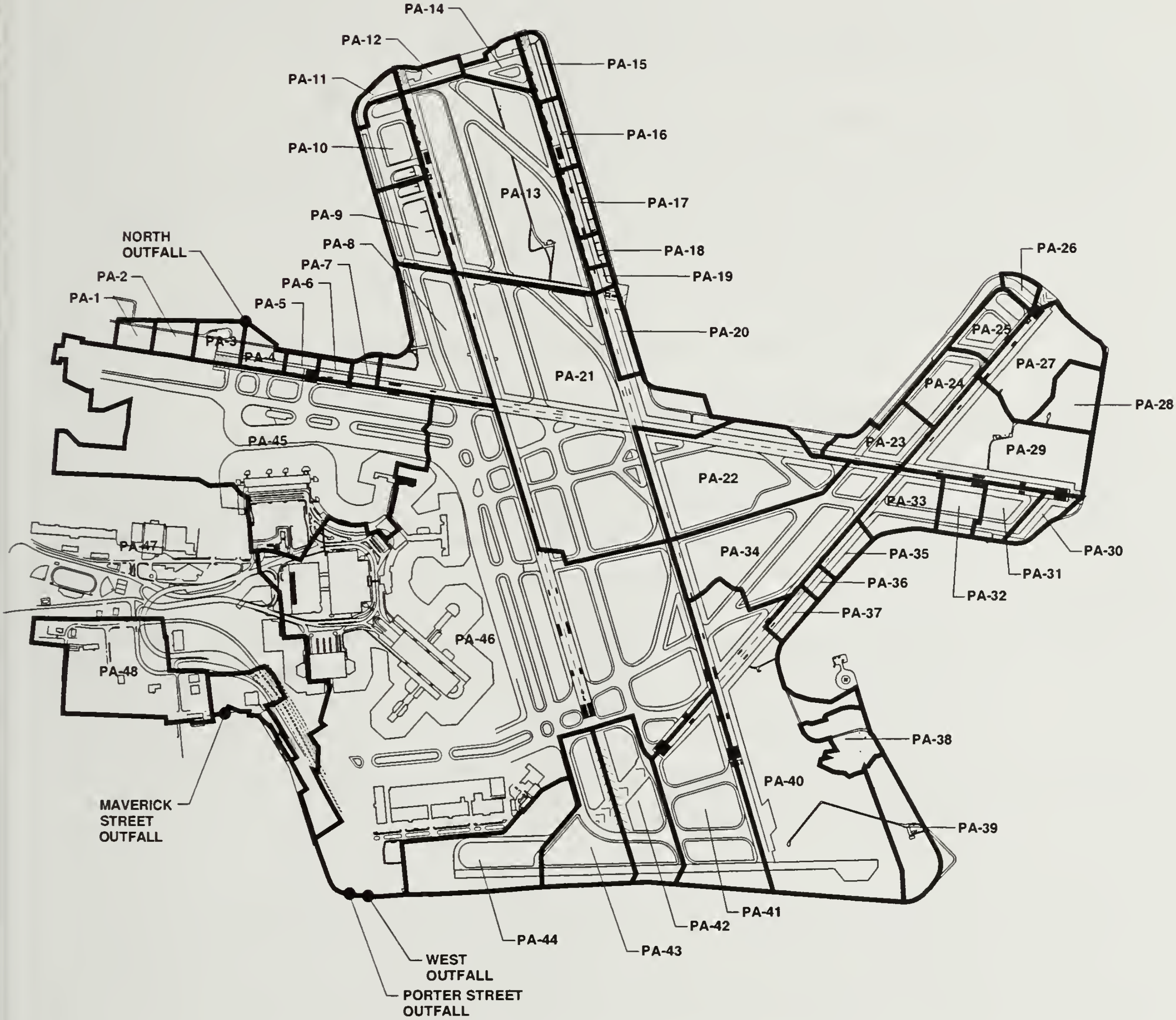
Construction of the runway and taxiway improvements under the Preferred Alternative will result in an increase of impervious surfaces, totaling approximately 37 acres or approximately 3.8 percent. The anticipated quantitative changes in runoff for the Preferred Alternative are summarized in Table 6.6-1.

Due to the dampening effect the incoming tide produces on the flow of stormwater through the airfield drainage system, the additional impervious surfaces will result in approximately a 3.8 percent increase in the peak rate of runoff. Water which is not evapo-transpired from presently vegetated areas will infiltrate the ground, and eventually discharge to Boston Harbor. There will be little to no measurable net change in airfield hydrology.

Table 6.6-1
Changes In Runoff Volume for the Preferred Alternative

Construction Element	Area of Pavement (acres)	Runoff (cubic feet)
Existing Airfield	990	150,072,912
Unidirectional Runway	+2.7	409,290
Centerfield Taxiway:		
North of 15R/33L	+16.8	2,551,240
South of 15R/33L	+13.3	2,022,195
Taxiway November Realignment	-1.6	-250,122
Taxiway Delta Extension	+7.5	1,138,432
Southwest Corner Optimization	-1.1	-169,779
Net Change	+37.6	+5,701,255
Percentage Change	+3.8%	+3.8%

Source: HNTB, 1999.



LEGEND

● Major Outfall

Figure 6.6-1

Proposed Drainage Areas

The new runoff will be conveyed through existing and new sections of drainage pipe to the existing drainage system outfalls. No new outfalls will be required to support the Preferred Alternative improvements. However, several areas of airfield drainage will be redistributed to other existing outfalls. A conceptual layout of the reconfigured stormwater drainage areas is provided in Figure 6.6-1.

6.6.2 Impacts to Water Quality During Construction

The potential exists for temporary increases of suspended solids due to unavoidable siltation while presently paved and/or vegetated soils are removed and replaced by new vegetation and pavement. Extensive siltation controls will be installed and maintained during all portions of construction to minimize adverse water quality impacts. Construction will be phased to minimize the areal extent of bare soil at any one time. Construction phasing and mitigation measures are described in Section 6.9.

6.6.3 Impacts to Water Quality During Airport Operations

Changes to water quality during airport operation once the Preferred Alternative is in place will be minimal. Any incremental changes in impact would result from runoff from new taxiway and runway pavement and the normal airfield activities associated with aircraft departures and arrivals, as well as wintertime deicing.

As illustrated in Figure 6.6-1, there will be some reconfiguration of the airfield drainage patterns. The reconfiguration will redirect some drainage in the southwest corner of the airfield away from the West Outfall into existing airfield perimeter outfalls A-41, A-42 and A-43. Presently, the West Outfall handles stormwater flows from the terminal, apron and fueling areas of the airport in addition to portions of the airfield. The West Outfall is equipped with an oil/water separator for treatment of the flows from the terminal, apron and fueling areas.

Stormwater to be redirected away from the West Outfall Runoff to the perimeter outfalls consists of flows from the airfield, including runways, taxiways and grassed infield areas. These portions of the airfield do not generate significant concentrations of contaminants. However, rather than discharging stormwater from these watersheds directly to the Harbor, Massport will install a low-flow water quality treatment structure to collect runoff from the first stormwater flush of these paved areas. The treatment device will be an off-line structure that would treat the first flush while allowing larger storms to by-pass the structure. The pollution prevention device would remove any sediment and floatables from the first flush and store them for subsequent removal and disposal.

Because the drainage system for the West Outfall includes the majority of the terminal area plus some taxiways and runways, this redirection of runoff will reduce the hydraulic load on the existing pollution control facility for the West Outfall. This will enhance its performance by reducing the volume of diluting taxiway and runway runoff that are minor sources of pollutants. All stormwater from fueling and maintenance areas will continue to

pass through the existing West Outfall pollution control facility. As stated previously, no fueling occurs in areas of the airfield where construction is proposed.

Therefore, although the pollutant loading to the harbor may be increased slightly as the result of deicing Runway 14/32, the general quality of runoff from the airfield is expected to be similar to present runoff, as previously discussed in Section 5.6 and shown in Table 5.5-1 of the Airside Project Draft EIS/EIR. Operation of the low flow stormwater quality treatment device is expected to minimize potential adverse water quality impacts to the maximum extent practicable. The data indicate that the existing airfield runoff meets the DEP's Class SB water quality standards. Because aircraft operations are expected to be more efficient, resulting in shorter taxiing times, the contribution of aircraft pollutants is expected to be reduced as well.

6.6.4 Consistency with DEP Stormwater Management Policies

Construction of the runway and/or the taxiway improvement components of the Preferred Alternative will require work within the 100-foot buffer zone as defined under the Massachusetts Wetlands Protection Act (see Section 6.5.2). Work within the buffer zone or associated resource areas is now subject to the DEP's Stormwater Management Policy and associated performance standards. A series of nine performance standards have been established. All new runway/taxiway construction within areas subject to the Stormwater Management Policy will be required to meet or exceed all applicable policies. Each of the policies are summarized below, together with a discussion of the project's compliance with each of the nine policies.

Policy 1

No new stormwater conveyances (e.g., Outfalls) may discharge untreated stormwater directly to or to cause erosion in wetlands or waters of the Commonwealth.

Consistency. The Preferred Alternative does not include any new or resized outfalls. Runoff from new paved areas will be handled through modifications to the existing airfield drainage system that result in better utilization of outfalls that are currently under capacity. A low flow stormwater quality treatment device may be installed to treat first-flush drainage from portions of the airfield drainage being redirected away from the West Outfall.

Policy 2

Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

Consistency. Not applicable. The Preferred Alternative will continue to discharge to tidal waters. As stated in the DEP's Explanation of Standards, on Page 1-5 of the Stormwater Policy Handbook, discharges to waters subject to tidal action are not required to maintain pre-development peak discharge rates.

Policy 3

Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post-development site should approximate the annual recharge from the pre-development or existing site conditions, based on soil types.

Consistency. Because of existing soil conditions, the extent of paved surfaces, and the shallow depth of tidally influenced groundwater, the airfield does not serve as a groundwater recharge resource. The proposed construction and operation will not significantly alter site recharge characteristics.

Policy 4

For new development, stormwater management systems must be designed to remove 80 percent of the average annual load of total suspended solids (TSS).

Consistency. Existing airfield runoff data indicate an average suspended solids concentration of approximately 11 mg/l, or less. Massport will install a low flow stormwater quality treatment device to handle first-flush drainage from paved areas where flow is being directed away from the West Outfall. For other sections of the airfield, solids removal will be accomplished as stormwater is directed across grassed infield areas via overland flow to the drainage system.

Policy 5

Stormwater discharges from areas with higher potential pollution loads require the use of specific stormwater Best Management Practices (BMPs). The use of infiltration practices without pretreatment is prohibited.

Consistency. Massport currently employs a range of BMPs in the operation of the airfield. Elements of these procedures include maintenance of stormwater catchbasins, inspection of the stormwater collection system, specified areas for vehicle maintenance, maintenance of spill reporting log, among other measures. The airfield is not considered a generator of higher pollutant loading.

Policy 6

Stormwater discharges to critical areas must utilize certain stormwater management BMPs for critical areas.

Consistency. All new stormwater drainage system components in areas of new runway and/or taxiway construction will be operated and maintained in accordance with Best Management Practices.

Policy 7

Redevelopment of previously developed sites must meet Stormwater Management Standards to the maximum extent practicable.

Consistency. Airfield redevelopment will meet the Stormwater Management Standards to the maximum extent practicable.

Policy 8

Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.

Consistency. A site-specific comprehensive erosion and sediment control plan will be developed for implementation until disturbed areas are stabilized, to prevent impacts during construction. No discharge will be made to critical areas.

Policy 9

All stormwater management systems must have an operation and maintenance (O&M) plan to ensure that systems function as designed.

Consistency. New components of the stormwater drainage system will be operated and maintained in accordance with current airfield stormwater management Best Management Practices included in the draft Stormwater Pollution Prevention Plan (SWPP) developed as part of Logan Airport's NPDES permit application.

6.7 Soils/Sediment Impacts

This section contains information on soil-related activities associated with the proposed construction of the Preferred Alternative. Construction will not take place in Boston Harbor and therefore impacts from the disturbance of marine sediment are not present.

Disposal of soils excavated for runway and taxiway construction will therefore be regulated under the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000) and will be managed in accordance with a project-specific Soil Management Plan. A discussion of the MCP and the Soil Management Plan is provided in the following sections.

6.7.1 Massachusetts Contingency Plan (MCP)

The purpose of the MCP is to "provide for the protection of health, safety, public welfare, and the environment" by instituting a uniform mechanism for identifying contaminated soils and groundwater and implementing appropriate corrective actions.

In terms of soil excavation, excess excavate from construction must be managed appropriately. Soils are termed "non-remediation wastes," if the constituents in the soil do not trigger the notification requirements for the site specific "site activities and uses." If the opposite is true and the contaminant constituents trigger DEP notification, the materials are termed "remediation wastes." The MCP procedures for the management of remediation wastes are at 310 CMR 40.0030.

The Soil Management Plan developed by Massport for construction projects at Logan Airport, which are described below, is consistent with the MCP and dictates how excess excavate will be reused, recycled or disposed.

6.7.2 Massport Soil Management Plan

For Logan Airport construction projects, Massport developed a Soil Management Plan which dictates specific requirements to which contractors must adhere to in determining the chemical characteristics of excavation materials and determine how the materials should be reused, recycled and/or disposed. Those same criteria will be applied in the Airside Project.

Massport's Soil Management Plan was adopted using a conservative approach to protect environmentally sensitive areas. The MCP (310 CMR 40.0000) contains criteria by which one can determine appropriate soil disposal conditions and/or locations, consistent with land use receptor characteristics as identified in Table 40.933(9) of the MCP. Massport has taken the conditions allowed within the MCP and adopted a more stringent approach that no excavation materials from Logan, no matter what the characterization results, will be disposed at sensitive areas such as residential, recreational or wetland areas.

The Massport Soil Management Plan considers soil to be either unregulated or regulated as follows:

- **Unregulated soils** are those soils having chemical concentrations equal to or of lower than the MCP Method 1 Risk Characterization soil standards for soil category S-1 and groundwater category GW-2/GW-3. Unregulated soils may be used as backfill at Logan Airport or used off site on industrial sites where soil quality concentrations are higher than the unregulated soil, and which may be capped with pavement or loamed and seeded. Unregulated soils cannot be disposed of in sensitive areas such as residential, recreational or wetland areas.

- **Regulated soils** are those soils having chemical concentrations which are equal to or greater than the MCP Method 1 Risk Characterization soil standards for soil category S-1 and groundwater category GW-2/GW-3. Regulated soils may only be beneficially reused or recycled at Logan Airport if the contaminant concentrations are less than S-2 levels, or at off-site DEP, permitted facilities. They may also be disposed of out-of-state at similar facilities. Regulated soils cannot be disposed in sensitive areas such as residential, recreational or wetland areas.

This combination of S-1/S-2 GW-2/GW-3 categories is the simplest form of risk characterization and means that Massport has eliminated all residential, recreation, and wetland areas as possible disposal sites for excavation materials from Logan.

6.7.3 Construction Area Soil Sampling Program

Construction of Runway 14/32 and the taxiway improvement components as part of the Preferred Alternative will require the excavation of unsuitable or excess soils. Table 6.6-2 of the Airside Project Draft EIS/EIR estimated that approximately 537,000 cubic yards of soil would be excavated if all the improvement elements were constructed. The Airside Project Draft EIS/EIR assumed a uniform depth of excavation throughout the construction area to develop a worst-case estimate. As the concept design has evolved between the Airside Project Draft EIS/EIR and Supplemental DEIS/FEIR, the excavation requirements have been refined, resulting in a revised excavation requirement of approximately 264,000 cubic yards. Of this excavation volume, approximately 131,000 cubic yards of miscellaneous fill will be reused at locations along the airfield construction during the final grading for shoulders and other uses. There will be 83,500 cubic yards of excavated soil materials and 49,500 cubic yards of bituminous pavement removed from Logan Airport for reuse/recycling/disposal at permitted facilities. The difference in excavation volumes between the Airside Project Draft EIS/EIR (537,000 cubic yards) and the Supplemental DEIS/FEIR (264,000 cubic yards) is due to site-specific soil data that were obtained through a recent soil boring program for geotechnical and environmental information (See Section 5.7.1).

6.7.3.1 Unidirectional Runway 14/32

The soil pre-construction characterization data indicate that the soil under the footprint of the proposed unidirectional Runway 14/32 does not exceed the Reportable Concentrations for S-2 soil. Design information indicates that there will not be any excavation of the common borrow that was used to fill Bird Island Flats and which underlies much of the runway alignment. An estimated 82,000 cubic yards of soil will be excavated. Of this volume, approximately 37,000 cubic yards will be reused for surface grading.

6.7.3.2 Centerfield Taxiway

Construction of the Centerfield Taxiway will require the excavation of approximately 52,000 cubic yards of soil material and the removal from the Airport of 11,000 cubic yards of existing fill. Approximately 41,000 cubic yards of soil will be reused. The soil pre-construction characterization data indicate that soil underlying the Centerfield Taxiway contains variable levels of contamination. The soil data indicate that no volatile compounds were present nor were any of the aliphatic fractions from the total petroleum hydrocarbon tests. The soil was found to exceed the S-2 Reportable Concentrations (RC S-2) for the polynuclear aromatic hydrocarbons, as determined in the EPH analysis. The PAH contamination was found from Taxiway Echo north to Taxiway Romeo. Beryllium

was the only priority pollutant metal to exceed the RC S-2. This condition was found adjacent to Runway 15L/33R and between Taxiways Echo and Charlie. Lead in the soil was found to exceed the 100 mg/Kg Toxicity Characteristic Leaching Procedure (TCLP) trigger level by a slight amount (110-120 mg/Kg) at three scattered locations. The TCLP test is one measure of the toxicity of a sample and upon exceeding regulatory limits it is determined to be TCLP hazardous. The results of the TCLP testing indicate that the soil did not exceed the TCLP regulatory limit of 5.0 mg/l for lead and is, therefore, not hazardous. The insecticide Dieldrin was found in the soil at eight locations. It is believed that the Dieldrin originated from historical mosquito control programs. The soil was found to not contain polychlorinated biphenyls.

6.7.3.3 Taxiway November Realignment

Soil underlying the area for the realignment of Taxiway November was found to be contaminated in excess of the Reportable Concentrations for S-2 soil with four polynuclear aromatic hydrocarbon (PAH) compounds and the insecticide Dieldrin. This contamination was only found in the surface soils (0-2 feet). The soil data indicate that no volatile compounds were present nor were any of the aliphatic fractions from the total petroleum hydrocarbon tests. Design information indicates that approximately 43,500 cubic yards of soil material will be excavated and 43,000 cubic yards of fill will be removed from Logan. Plans indicate that approximately 500 cubic yards will be reused onsite.

6.7.3.4 Southwest Corner Taxiway Reconfiguration

The soil sampling and analysis data indicate that the soil in the area of the Southwest Corner Taxiway Reconfiguration contains concentrations of four PAH compounds and the insecticide Dieldrin which exceed the Reportable Concentrations for S-2 soil. The soil data indicate that no volatile compounds were present nor were there any of the aliphatic fractions from the total petroleum hydrocarbon tests. Design information indicates that approximately 5,000 cubic yards of soil will be excavated and reused onsite.

6.7.3.5 Taxiway D Extension

The extension of Taxiway D will require the excavation of approximately 32,000 cubic yards of miscellaneous soil materials, all of which will be removed from the Airport except for 6,000 cubic yards reused onsite.

6.7.3.6 Massachusett Contingency Plan (MCP) Response Actions

As discussed in previous sections, certain contaminant concentrations were found to exceed the MCP Soil Category S-2 reportable concentrations resulting from a pre-construction characterization that was performed. As a result, Massport transmitted a Release Notification Form to DEP in January 2000. A Release Tracking Number (RN) of 3-19157 was assigned to the site by DEP. Through the performance of a Method 3 Risk Characterization, it was determined that certain concentrations of dieldrin in the vicinity of Sierra and Uniform

Taxiways and Runway 4R required remediation. Massport transmitted a Release Abatement Measure (RAM) Plan to DEP and subsequently removed the dieldrin source area. In January 2001, Massport transmitted a RAM Completion Report and Response Action Outcome. These documents state that a Condition of No Significant Risk to human health, safety, public welfare, and the environment exists at the site, and the conditions of a Class A-2 RAO have been met. No further MCP response actions are required.

6.7.4 Soil Management

The results of the soil pre-construction characterization program indicate that the soil underlying Runway 14/32 does not exceed the Reportable Concentrations for S-2 soil. Soil underlying the proposed construction areas for the Centerfield Taxiway, the realignment of Taxiway November and the Southwest Corner Taxiway realignment do exceed the Reportable Concentrations for S-2 soil. It is Massport's plan to reuse excavated soil on Logan Airport wherever feasible. Massport does not allow any soil from Logan Airport to be reused/recycled/disposed at sensitive off-site areas (near wetlands, drinking water supplies, and dwellings). Soil generated at Logan Airport may be reused in industrial sites as long as the soil is of comparable quality to the soil at the industrial site. Otherwise it must be disposed of at a state-approved lined landfill. In keeping with Massport's Soil Management Plan, the pavement will be either recycled at state approved in-state or out-of-state recycling facilities or disposed at approved in-state or out-of-state lined landfills.

6.8 Environmental Justice

The Environmental Justice analysis in the Airside Project Draft EIS/EIR was expanded for this Supplemental DEIS/FEIR. Noise was found to be the only adverse impact associated with the Preferred Alternative with the potential for environmental justice impacts. Additional demographic analyses of the noise-affected areas, as well as of the affected municipalities, were conducted to determine if minority and/or low-income populations would be disproportionately affected by the Preferred Alternative. This analysis found that there is no high and adverse disproportionate impact caused by the Preferred Alternative.

An additional area within the 65 dB DNL contour associated with the Preferred Alternative includes a predominantly Hispanic neighborhood in Chelsea that would experience an increase in noise of 0.6 dB DNL or less. Under FAA standards, this change is not a significant adverse impact (see discussion at Section 6.2.2.3). Moreover, mitigation of the increased noise will be provided to the affected community in the form of sound insulation. As a result, there is no disproportionate high and adverse impact on minority or low-income populations resulting from the Preferred Alternative.

As to the communities surrounding Logan, only 21 percent of the population within the 65 dB DNL contour is minority, compared to the Suffolk County minority population of 38 percent. Less than 2 percent of the population within the 65 dB DNL contour has a household income less than 150 percent of poverty level. The following sections provide a more detailed discussion of the environmental justice analysis of the impacts of the Preferred Alternative.

6.8.1 Introduction

The analysis of project impacts on minority and low-income communities that follows is conducted in accordance with federal Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, the National Environmental Policy Act (NEPA), and the Department of Transportation Order to Address Environmental Justice in Minority Populations and Low-Income Populations (Final US DOT Order).[12]

EO 12898, issued in 1994, requires "each Federal agency [to] make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...." The U.S. Department of Transportation (DOT) published the Final US DOT Order in 1997,[13] setting forth a process by which DOT and its operating administrations will integrate the goals of EO 12898 with its existing regulations and guidance. The Final US DOT Order defines key terms, and provides guidance for identifying and addressing disproportionately high and adverse impacts to low-income and minority populations. Additional directives for implementing EO 12898 within the context of the NEPA process are provided by the Council on Environmental Quality (CEQ) in *Environmental Justice Guidance under the National Environmental Policy Act*.[14]

NEPA directs federal agencies to consider social, economic, and environmental factors in the evaluation of proposed actions. The Federal Aviation Administration has specified that environmental impact statements prepared for airports are to identify social impacts, such as community disruption, and identify the degree of impact and measures to minimize such impact.[15]

The May 7, 1999 EOEA Certificate Airside Project Draft EIS/EIR also directs Massport to provide the following information within the context of an environmental justice analysis: more detailed demographic data on the affected populations in both tabular and graphic form, analysis of the full range of impacts (including noise impacts within the 60 dB DNL contour), a comparison of the affected population with that of Boston and

12 U.S. DOT, April 15, 1997, Final US DOT Order 5610.2, *Federal Register*, Volume 62, No. 72.
13 Ibid.
14 Council on Environmental Quality, *Environmental Justice: Guidance Under the National Environmental Policy Act*, 1997.
15 FAA, October 8, 1985, *Airport Environmental Handbook*, Order 5050.4A.

the other affected municipalities, and a discussion of the community participation process used in preparing the Airside Project Draft EIS/EIR and Supplemental DEIS/FEIR.

6.8.2 Summary of Impacts of the Preferred Alternative

The following sections provide a summary of the environmental impacts of the Preferred Alternative as identified through the NEPA/MEPA environmental review process. For a more detailed discussion of each of these impact areas, refer to the appropriate section of this chapter. All impacts to biotic communities, water resources, and soils/sediments will occur on Massport property and will not affect adjacent communities within the study area.

6.8.2.1 Noise

The noise analysis is based on modeled noise impacts associated with the 29M Low Fleet scenario. This scenario presents the worst case for noise impacts in terms of the size of the noise-impacted population among all the alternative scenarios analyzed. All other scenarios show less noise impacts.

The established FAA threshold for adverse noise impacts in residential areas is 65 dB DNL. FAA Order 5050.4A, states "FAA's threshold of significance for noise impacts has been determined to be a 1.5 dB DNL increase in noise over any noise sensitive area located within the 65 dB DNL contour." Areas within the 60 dB DNL noise contour also were identified in accordance with the MEPA certificate.

Under the Preferred Alternative, unidirectional Runway 14/32 directs more airport noise over the water and allows for a more equitable distribution of aircraft operations consistent with PRAS goals. The Preferred Alternative results in a reduction of population exposed to DNL values greater than or equal to 70 and 75 dB DNL. These noise reductions benefit the communities that are currently most heavily impacted by noise—East Boston, Winthrop and Revere.

Under current conditions, Runway 15/33 is utilized significantly less than its intended utilization factor in accordance with the PRAS goals. This situation would be expected to continue without Runway 14/32. With Runway 14/32, Runway 15/33 will be able to be utilized at levels closer to those set out in the PRAS goals. (See discussion in Section 4.6.5.) The greater use of Runway 15R/33L in accordance with PRAS goals allowed by Runway 14/32 will result in a slightly larger population within the 65 dB DNL contour when compared to the No Action Alternative. The total population within the 65 dB DNL contour for the Preferred Alternative (29M Low Fleet scenario) is projected to be 17,894, an increase of 378 people (2 percent) when compared to the No Action 65 dB DNL population of 17,516.

According to the noise analysis conducted for this Supplemental DEIS/FEIR, the increase in noise levels is 0.6 dB or less in the area newly included within the 65 dB DNL contour under the Preferred Alternative. Under FAA's noise impact criteria, the increase in noise in these areas is not significant. Dwellings within these areas will become eligible for

sound insulation under FAA's criteria, and will be sound insulated as part of the Preferred Alternative. (See Chapter 8 for a discussion of mitigation commitments.)

Implementation of the Preferred Alternative is expected to produce a reduction in ground taxi noise at the following noise monitoring stations:

- Loring Road at Court (#7), Winthrop;
- Bayswater and Shawsheen (#10), East Boston;
- East Boston Yacht Club (#12);
- Somerset and Johnson (#6), Winthrop;
- Jeffries Point Yacht Club (#14), and
- Sumner Street near Lamson (A), East Boston.

Therefore there are no adverse ground noise impacts associated with the Preferred Alternative.

6.8.2.2 Land Use

The Preferred Alternative involves operational and construction improvements to reduce delay and enhance safety at Logan, and is restricted to activities and purposes compatible with normal airport operations and existing land use plans. The noise analysis indicates that the Preferred Alternative will reduce noise in areas with the highest noise impacts, but will slightly increase the population within the 65 dB DNL contour, when compared to the No Action Alternative.

All construction will occur on the existing airfield. There will be no displacement or relocation of any residential housing, community institutions or off-airport businesses as a result of implementation of the Preferred Alternative. The only relocation required is for the commercial tenants of Building 60 in the South Cargo area of the airport, and relocation assistance as required under state and federal law will be provided to mitigate this impact. A more detailed discussion of land use impacts is provided in Section 6.3.

6.8.2.3 Air Quality

Due to improved airfield efficiency and shorter delay periods, the Preferred Alternative is projected to result in a slight reduction of emissions of air pollutants when compared to the No Action Alternative. The increased use of Runway 15/33 under Preferred Alternative does not result in an adverse air quality impact as modeled at the Eagle Hill receptor site located in East Boston at the Runway 15 end. Ambient levels of air pollutants at the Eagle Hill receptor site, as well as throughout the study area, are expected to be well within ambient air quality standards and guidelines under all future fleet scenarios. Therefore, there are no adverse air quality impacts associated with the Preferred Alternative.

6.8.2.4 Construction

Construction of the runway and taxiway improvements will occur on the existing airfield. Construction will be managed to minimize air, noise and other impacts to the adjacent community. All construction vehicles will be required to access Logan Airport via Route 1A or the Ted Williams Tunnel on designated haul routes. Construction traffic will be kept on Logan Airport roadways or the state highway system and will not be allowed on local community streets, except for a short section of Neptune Road for access to the north construction gate. A more detailed discussion of construction impacts is provided in Section 6.9 of this Supplemental DEIS/FEIR.

An analysis of construction noise impacts indicates that the noise increases projected as a result of construction range from 0 dBA to 0.8 dBA with respect to the ambient level. Based on Federal Highway Administration criteria that categorizes less than a 5 dBA increase as 'no impact,' no construction noise impact is predicted at any off-airport residential sites. Therefore, there are no adverse construction impacts associated with the Preferred Alternative.

6.8.3 Methodology and Key Definitions

6.8.3.1 Methodology

The analysis of impacts conducted for this Supplemental DEIS/FEIR identified noise as the only off-site environmental impact associated with the Preferred Alternative with the potential to cause disproportionately high and adverse health or environmental effects on minority and/or low-income populations. The environmental justice analysis which follows therefore assesses the potential for disproportionate noise impacts to low-income and minority populations.

The data presented are based on 1990 U.S. Census Data[16] using Geographic Information System (GIS) technology to analyze impacts at a Census Block level where the data are available. The "Block" represents the most detailed level of census data. In addition, the estimates of 1995 population (total and minority) for all cities and towns in Massachusetts, developed by the Massachusetts Institute for Social and Economic Research (MISER), were reviewed. No comparable estimate of 1995 low-income population was available. The 1995 population estimates are not available at a Block Group level and therefore were not used to update this analysis. Nonetheless, the 1990 Census Block data were compared to the 1995 population estimates to assure that there are no meaningful differences in the data relevant to the environmental justice analysis (See Table 6.8-1).

16 The U.S. Bureau of the Census conducted the most recent decennial census in the spring of 2000. Initial data on statewide population was released in December 2000. More detailed information from the 2000 decennial census will become available with the release of Public Law 94-171 in March 2001 and continuing throughout 2003. These initial data are redistricting data summary files at the block level with population totals, age of population 18 and older, and race/ethnicity that are released to the legislature and governors of each state. In mid summer 2001, household relationship, detail age and housing tenure data will be available. Detailed socioeconomic data will be released throughout 2002. Source: U.S. Department of Commerce, U.S. Census Bureau Website (www.census.gov), and U.S. Department of Commerce, U.S. Census Bureau Boston Regional Office, Verbal Communication with Tia Costello, January 08, 2001.

Table 6.8-1
1995 Estimate of Minority Population in Study Area Political Jurisdictions Affected by 65 dB DNL

			1995 Estimated Population by Race/Hispanic Origin				
City	Total Population	Percent Change from 1990	White[1]		Percent Change from 1990	Non-White[2] and Hispanic		Percent Change from 1990
Boston	564,328	-1.75%	314,687	(56%)	-7.87%	249,641	(44%)	6.30%
Chelsea	29,727	3.54%	15,382	(52%)	-12.2%	14,345	(48%)	25.32%
Revere	43,698	2.13%	38,541	(88%)	-0.87%	5,157	(12%)	31.85%
Winthrop	18,195	0.38%	17,528	(96%)	-0.24%	667	(4%)	20.18%
Total (Suffolk County)	**655,948**	**-1.20%**	**386,138**	**(59%)**	**-6.54**	**269,810**	**(41%)**	**7.58%**

Source: Massachusetts Institute for Social and Economic Research (MISER).
1 Not of Hispanic origin.
2 Includes all persons who indicated their race as African-American, American Indian, Asian or Pacific Island and Other Race.

The minority and low income populations within the 65 dB DNL contour as delineated by the Airside Project noise impact assessment were identified for the No Action Alternative and Preferred Alternative under the 29M Low Fleet scenario, which represents the highest impact scenario. The 65 dB DNL contour is the thresholds established by FAA for adverse noise impacts in residential areas. A similar analysis was developed for the population within the 60 dB DNL noise contour in accordance with the Massachusetts Secretary of Environmental Affairs' Certificate on the Draft Environmental Impact Report.

The characteristics of the population within the 60 and 65 dB DNL contours were also compared to the characteristics of those political jurisdictions affected by these noise contours. The political jurisdictions affected by the 65 dB DNL contour include the Cities of Boston, Chelsea and Revere, and the Town of Winthrop, which collectively comprise Suffolk County. The City of Everett is added to the above list for communities affected by the 60 dB DNL contour.

Analysis conducted for the Airside Project Draft EIS/EIR first identified census blocks that were 50 percent or more minority, and then counted the total population within those blocks to determine the minority population. Low-income populations were identified by the median income for the census block group. The entire population of the block group was considered to be low-income if the median household income for the block group was at or below the identified poverty level. A combined total of the minority and low-income populations was reported in the Airside Project Draft EIS/EIR.

A more detailed demographic analysis was conducted for this Supplemental DEIS/FEIR, the results of which are described below.

All minority individuals for the census blocks within the 60 and 65 dB DNL noise contours were identified from the 1990 census data. The minority population presented in this Supplemental DEIS/FEIR represents the total minority population within the identified noise contours. The methodology to identify low-income populations was the same for both the Airside Project Draft EIS/EIR and this Supplemental DEIS/FEIR. Low-income populations were identified by the median income for the census block group. The entire population of the block group was considered to be low-income if the median household income for the block group was at or below the identified poverty level. An additional level of analysis was conducted in this Supplemental DEIS/FEIR to identify the population at 150 percent of the federal poverty level. This Supplemental Draft EIS/Final EIR presents the minority and low-income populations separately, instead of as a combined total as was done for the Airside Project Draft EIS/EIR analysis.

6.8.3.2 Definitions

Minority Population

A minority person is defined as an individual who is a member of one of the following population groups: Black (not of Hispanic origin), Hispanic, Asian, and American Indian or Native Alaskan. According to the Final US DOT Order, a minority population means any readily identifiable groups of minority persons that live in geographic proximity. CEQ Guidance states that minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Information on race and Hispanic origin was analyzed at the Block Level utilizing the 1990 U.S. Census, which is the most detailed level of population data made available by the U.S. Bureau of Census.

Low Income

The Final US DOT Order defines low-income persons as those whose "median household income is below the United States Department of Health and Human Services poverty guidelines." CEQ Guidelines state that low-income populations should be identified with the annual statistical poverty thresholds developed by the Bureau of the Census. The Logan Airside Project improvements Planning Project used the 1990 U.S. Census as the data base for demographic analyses.

The federal definition of poverty level varies by size of family and number of related children under 18 years. Average poverty thresholds in 1990 ranged from $6,652 for one person, to $26,280 for households with nine or more family members. (See Appendix I.) According to the 1990 census, the average household size in Massachusetts is 2.68 persons, and in Suffolk County it is 2.51 persons. (Logan Airport and the majority of the study area

are located in Suffolk County.[17]) A family size of three therefore was selected as representative.

The population was considered to be a low-income population if the median household income was at or below $10,560. This represents the 1990 federal poverty level for a three-person household as defined by the U.S. Department of Health and Human Services.[18] In order to provide additional analysis of a broader range of incomes, the environmental justice analysis was also conducted using a median household income of 150 percent ($15,840) of the poverty level for a family of three. Information on income was analyzed at a Block Group level, the most detailed level of information available from the 1990 Census regarding income.

High and Disproportionate Adverse Impacts

Adverse impacts to low-income and/or minority populations are considered "high and disproportionate" if: (a) the adverse impact is predominantly borne by a minority population and/or a low-income population, or (b) the adverse impact that will be suffered by the minority population and/or low-income population is more severe or greater in magnitude than the adverse impact that will be suffered by the non-minority population and/or non-low-income population. The Final US DOT Order directs FAA to determine disproportionate impact, taking into account mitigation, enhancement measures and all off-setting benefits to the affected populations, as well as the design, comparative impacts and the relevant number of similar existing system elements in non-minority and non-low income areas.

6.8.4 Baseline Socioeconomic and Demographic Characteristics of Affected Jurisdictions

A determination of "disproportionately high and adverse impacts" to a low-income or minority population is based on a comparison of the impacts on these populations to the impacts experienced by the affected population as a whole. The Area of Potential Affect for the Logan Airport Airside Project improvements Project was identified as those political jurisdictions (cities and towns) affected by the 65 dB DNL contour, which is consistent with the federal definition of adverse noise impact contained in FAR Part 150. The potentially affected area for noise impacts was chosen to delineate the study area because noise is the most widespread impact. The population within the 60 dB DNL noise contour was also analyzed to be consistent with the MEPA Certificate on the Airside Project Draft EIS/EIR. The political jurisdictions affected by the 65 dB DNL contour include Boston, Chelsea, Winthrop and Revere, which collectively comprise Suffolk County. The City of Everett is added to this list of potentially affected communities under the 60 dB DNL noise contour. Tables 6.8-2 to 6.8-6 provide a summary of selected socio-economic and demographic characteristics of these communities. This information is used to provide a baseline against which to compare the characteristics of the population within the 65 and 60 dB DNL contours.

17 Average household size was determined by dividing the number of persons by the number of households as provided in Landview III, which uses the 1990 U.S. Census as a database.

18 The 1999 poverty level for a family of three as report by the U.S. Department of Health and Services is $13,880.

Table 6.8-2
Median Household Income of Political Jurisdictions within the 60 dB DNL Noise Contour

Jurisdiction	Median Household Income ($)	Percent Below Poverty Level
Boston	29,180	18.7%
South Boston[1]	25,539	17.3%
East Boston[1]	22,925	19.3%
Chelsea	25,144	24.1%
Everett	30,786	9.6%
Revere	30,659	11.6%
Winthrop	37,240	5.7%
Suffolk County	29,399	18.1%

1 Neighborhoods within the City of Boston provided for informational purposes. Population included within the City of Boston totals.

Source: 1990 U.S. Census Data

Table 6.8-3
Minority Population of Political Jurisdictions Affected by the 65 dB DNL Noise Contour

City	Total 1990 Population	1990 Population by Race/Hispanic Origin	
		White[1]	Non-White[2] and Hispanic
Boston	574,283	339,458 (59%)	234,825 (41%)
South Boston[3]	29,495	28,257 (96%)	1,238 (4%)
East Boston[3]	32,941	25,171 (76%)	7,770 (24%)
Chelsea	28,710	17,263 (60%)	11,447 (40%)
Revere	42,786	38,875 (91%)	3,911 (9%)
Winthrop	18,127	17,572 (97%)	555 (3%)
Total (Suffolk County)	**663,906**	**413,168 (62%)**	**250,788 (38%)**

Source: 1990 U.S. Census Data

1 Not of Hispanic origin.

2 Includes all persons who indicated their race as African-American, American Indian, Asian or Pacific Island and Other Race, not of Hispanic origin.

3 Neighborhoods within the City of Boston provided for informational purposes. Population included within the City of Boston totals.

Table 6.8-4
Minority Population of Political Jurisdictions Affected by the 60 dB DNL Noise Contour

City	Total 1990 Population	1990 Population by Race/Hispanic Origin: White[1]		Non-White[2] and Hispanic	
Total Suffolk County[3]	663,906	413,168	(62%)	250,788	(38%)
Everett	35,701	32,010	(90%)	3,691	(10%)
Total	**699,607**	**445,178**	**(64%)**	**254,479**	**(36%)**

Source: 1990, U.S. Census Data
1 Not of Hispanic origin.
2 Includes all persons who indicated their race as African-American, American Indian, Asian or Pacific Island and Other Race, not of Hispanic origin.
3 See Table 6.8-2 for detailed information on political jurisdictions within Suffolk County.

Table 6.8-5
Estimate of 1995 Minority Population in Study Area Political Jurisdictions Affected by 60 dB DNL

City	Total Population	Percent Change from 1990	1995 Population by Race/Hispanic Origin: White[1]		Percent Change from 1990	Non-White[2] and Hispanic		Percent Change from 1990
Total Suffolk County	655,948	-1.20%	386,138	(59%)	-6.54%	269,810	(41%)	(7.58%)
Everett	36,307	1.69%	32,336	(89%)	1.01%	3,971	(11%)	(7.59%)
Total	**692,255**	**-1.06%**	**418,474**	**(60%)**	**-6.35%**	**273,781**	**(40%)**	**(7.58%)**

Source: Massachusetts Institute for Social and Economic Research (MISER).
1 Not of Hispanic origin.
2 Includes all persons who indicated their race as African-American, American Indian, Asian or Pacific Island and Other Race.
3 Not of Hispanic origin.

Table 6.8-6
Estimated Population within the 65 dB DNL Contour
No Action Alternative - 29M Low Fleet Scenario

	Non-Hispanic White Population 65 dB DNL	Minority Population 65 dB DNL	Total Population 65 dB DNL	Household Income <$10,560 Poverty Level	Household Income <$15,840 150 percent Poverty Level
Back Bay	0	0	0	0	0
Charlestown	0	0	0	0	0
Chelsea	1,154	1,902	3,056	0	68
Dorchester	0	0	0	0	0
East Boston	5,756	1,361	7,117	0	0
Everett	0	0	0	0	0
Jamaica Plain	0	0	0	0	0
Long Island	0	0	0	0	0
Quincy	0	0	0	0	0
Revere	2,736	265	3,001	0	0
Roxbury	0	0	0	0	0
South Boston	49	17	66	18	18
South End	0	0	0	0	0
Winthrop	4,231	60	4,291	0	0
Total	**13,926 (79.4%)**	**3,605 (20.6%)**	**17,531**	**18 (0.1%)**	**86 (0.4%)**

Source: 1990 U.S. Census Data, HMMH, 1999.
1 Minority population calculated from two Census Categories: Persons by Race, and Persons of Hispanic Origin.

The 1995 population estimates indicate that population has declined in the City of Boston, and increased in the other communities, particularly in Revere and Chelsea. Overall the minority population within the study area has increased, while the white population has declined.

6.8.5 Analysis of Impacts to Minority or Low Income Populations

6.8.5.1 Impacts to Minority Populations

Under the No Action Alternative, the total population within the 65 dB DNL contour under the 29M Low Fleet scenario is 17,531. Of that total, approximately 79.4 percent of the affected population is white (non-Hispanic) and 20.65 percent of the affected population are members of a minority group. The population within the 65 dB DNL contour increases slightly (by 378 people) under the Preferred Alternative; however, the characteristics of the affected population are essentially the same. Of the total population of 17,909 within 65 dB DNL, 78.6 percent of the population is white (non-Hispanic) and 21.4 percent of the population is minority. The comparison indicates that under either Alternative, the affected population is predominately (79 to 80 percent) non-minority.

The Preferred Alternative allows noise impacts to be distributed more equitably across communities and over water in accordance with runway utilization goals that have been incorporated into PRAS. One of the primary goals of PRAS is to limit the number of people exposed to the highest noise levels (70 to 75 dB DNL). Implementation of unidirectional Runway 14/32 under the Preferred Alternative (29M Low Fleet scenario) reduces the noise-impacted population within 75 dB DNL from 257 to 77, a net reduction of 70 percent. The Preferred Alternative (29M Low Fleet scenario) also reduces the noise-impacted population within the 70 dB DNL contour from 1,521 to 1,459, a 4 percent reduction.

The difference in affected minority populations within the 65 dB DNL contour between the Preferred Alternative and the No Action Alternative is 0.9 percent. The percentage of the affected population within the 65 dB DNL contour for Preferred Alternative classified as minority (21.4 percent) is significantly lower than the percentage of the population of the affected jurisdictions (Boston, Chelsea, Revere and Winthrop) classified as minority (38 percent). This assessment still holds true assuming a 7.58 percent increase in the minority population within Suffolk County from 1990 to 1995 (See Table 6.8-4). An increase of this magnitude would increase the minority population within 65 dB DNL under Preferred Alternative from 3,834 (21.4 percent) to 4,124 (23.0 percent), which is still significantly lower than the 41 percent of the 1995 population of Suffolk County estimated to be minority. (See Tables 6.8-6 and 6.8-7 for a more detailed comparison of the affected population within the 65 dB DNL contour for the No Action Alternative and the Preferred Alternative, respectively.)

An area located in Chelsea added to the 65 dB DNL under the Preferred Alternative is inhabited predominantly by a Hispanic population. Approximately 227 minority residents within Chelsea will experience a noise increase of 0.6 dB or less. Sound insulation of the affected homes has been included as part of the Preferred Alternative to mitigate adverse noise impacts. not 244?

The noise effect of the Preferred Alternative does not represent an adverse impact to minority populations because it does not exceed the FAA threshold of significant impact (greater than a 1.5 dB change for populations within the 65 dB DNL). Moreover, overall airport noise does not represent a disproportionate impact to minority populations because only 21 percent of the population within the 65 dB DNL contour is minority compared to a 38 percent minority population for Suffolk County. In addition, the noise impact suffered by the minority population is not appreciably more severe or greater in magnitude than the adverse effect suffered by the non-minority population. In the 37M High Fleet scenario, the noise affected population of Chelsea is expected to be reduced. Finally, all noise impacts on Chelsea residents falling within the 65dB DNL noise contour will be mitigated with sound insulation.

Table 6.8-7
Estimated Population within the 65 dB DNL Contour
Preferred Alternative - 29M Low Fleet Scenario

	Non-Hispanic White Population 65 dB DNL	Minority Population[1] 65 dB DNL	Total Population 65 dB DNL	Household Income <$10,560 Poverty Level	Household Income <$15,840 150 percent Poverty Level
Back Bay	0	0	0	0	0
Charlestown	0	0	0	0	0
Chelsea	1,171	2,129	3,300	0	339
Dorchester	0	0	0	0	0
East Boston	5,890	1,366	7,256	0	0
Everett	0	0	0	0	0
Jamaica Plain	0	0	0	0	0
Long Island	0	0	0	0	0
Quincy	0	0	0	0	0
Revere	2,734	265	2,999	0	0
Roxbury	0	0	0	0	0
South Boston	80	18	98	18	18
South End	0	0	0	0	0
Winthrop	4,200	56	4,256	0	0
Total	**14,075 (78.6%)**	**3,834 (21.4%)**	**17,909**	**18 (0.1%)**	**357 (1.9%)**

Source: 1990 U. S. Census Data, HMMH, 1999.
1 Minority population calculated from two Census Categories: Persons by Race, and Persons of Hispanic Origin.

A similar conclusion can be reached when comparing the affected minority populations within the 60 dB DNL for the No Action Alternative and the Preferred Alternative. The affected population within 60 dB DNL is predominately white (Non-Hispanic) for No Action Alternative (79.3 percent) and for Preferred Alternative (78.9 percent). The percentage of the affected population within 60 dB DNL classified as minority is essentially the same; 20.7 percent for No Action Alternative and 21.1 percent for Preferred Alternative. In addition, the percentage of the affected population within the 60 dB DNL contour for Preferred Alternative classified as minority (21.1 percent) is lower than the percentage of the population of affected jurisdictions (Boston, Chelsea, Everett, Revere, and Winthrop) classified as minority (38 percent). Tables 6.8-9 and 6.8-10 provide a more detailed comparison of the affected population within the 60 dB DNL contour for the No Action Alternative and the Preferred Alternative, respectively.

Table 6.8-8
Comparison of Noise Impacts in Chelsea for Census Blocks Added to or Removed from the 65 dB DNL Contour - 29M Low Fleet Scenario

Tract	Block	No Action Alternative (dB)	Preferred Alternative (dB)	Difference (dB)
1602	202	64.8	65.2	0.4
1602	204	64.8	65.4	0.6
1602	402	65.0	64.9	-0.1
1604	405	64.9	65.1	0.2

Table 6.8-9
Estimated Population within the 60 dB DNL Contour No Action Alternative – 29M Low Fleet Scenario

				Household Income	
	Non-Hispanic White Population 60 dB DNL	Minority Population[1] 60 dB DNL	Total Population 60 dB DNL	<$10,560 Poverty Level	<$15,840 150 percent Poverty Level
Back Bay	0	0	0	0	0
Charlestown	0	0	0	0	0
Chelsea	4,399	5,833	10,232	1	1,227
Dorchester	0	0	0	0	0
East Boston	20,527	5,508	26,035	0	1,977
Everett	214	6	220	0	0
Jamaica Plain	0	0	0	0	0
Long Island	0	0	0	0	0
Quincy	0	0	0	0	0
Revere	4,827	400	5,227	0	125
Roxbury	0	0	0	0	0
South Boston	5,672	338	6,010	42	1,488
South End	0	0	0	0	0
Winthrop	11,559	240	11,799	0	0
Total	**47,198 (79.3%)**	**12,325 (20.7%**	**59,523**	**43 (0.07%**	**4,817 (8.0%)**

Source: 1990 U.S. Census Data, HMMH, 1999.

1 Minority population calculated from two Census Categories: Persons by Race, and Persons of Hispanic Origin.

Table 6.8-10
Estimated Population within the 60 dB DNL Contour
Preferred Alternative – 29M Low Fleet Scenario

	Non-Hispanic White Population 60 dB DNL	Minority Population[1] 60 dB DNL	Total Population 60DNL	Household Income <$10,560 Poverty Level	Median Income <$15,840 150 percent Poverty Level
Back Bay	0	0	0	0	0
Charlestown	0	0	0	0	0
Chelsea	4,407	5,963	10,370	1	1,227
Dorchester	0	0	0	0	0
East Boston	20,650	5,510	26,160	0	1,977
Everett	321	19	340	0	0
Jamaica Plain	0	0	0	0	0
Long Island	252	250	502	502	502
Quincy	0	0	0	0	0
Revere	4,727	388	5,115	0	125
Roxbury	0	0	0	0	0
South Boston	6,202	401	6,603	42	1,488
South End	0	0	0	0	0
Winthrop	11,122	206	11,328	0	0
Total	**47,681 (78.9%)**	**12,737 (21.1%)**	**60,418**	**545 (0.9%)**	**5,319 (8.8%)**

Source: U. S. Census Data, HMMH, 1999.
1 Minority population calculated from two Census Categories: Persons by Race, and Persons of Hispanic Origin.

Figure 6.8-1 illustrates the relationship of the 60 and 65 dB DNL noise contours for the No Action Alternative and the Preferred Alternative to the minority populations within the communities adjacent to Logan.

6.8.5.2 Impacts to Low-Income Groups

There are no low-income populations within 75 dB DNL or 70 dB DNL under either the No Action or the Preferred Alternatives.

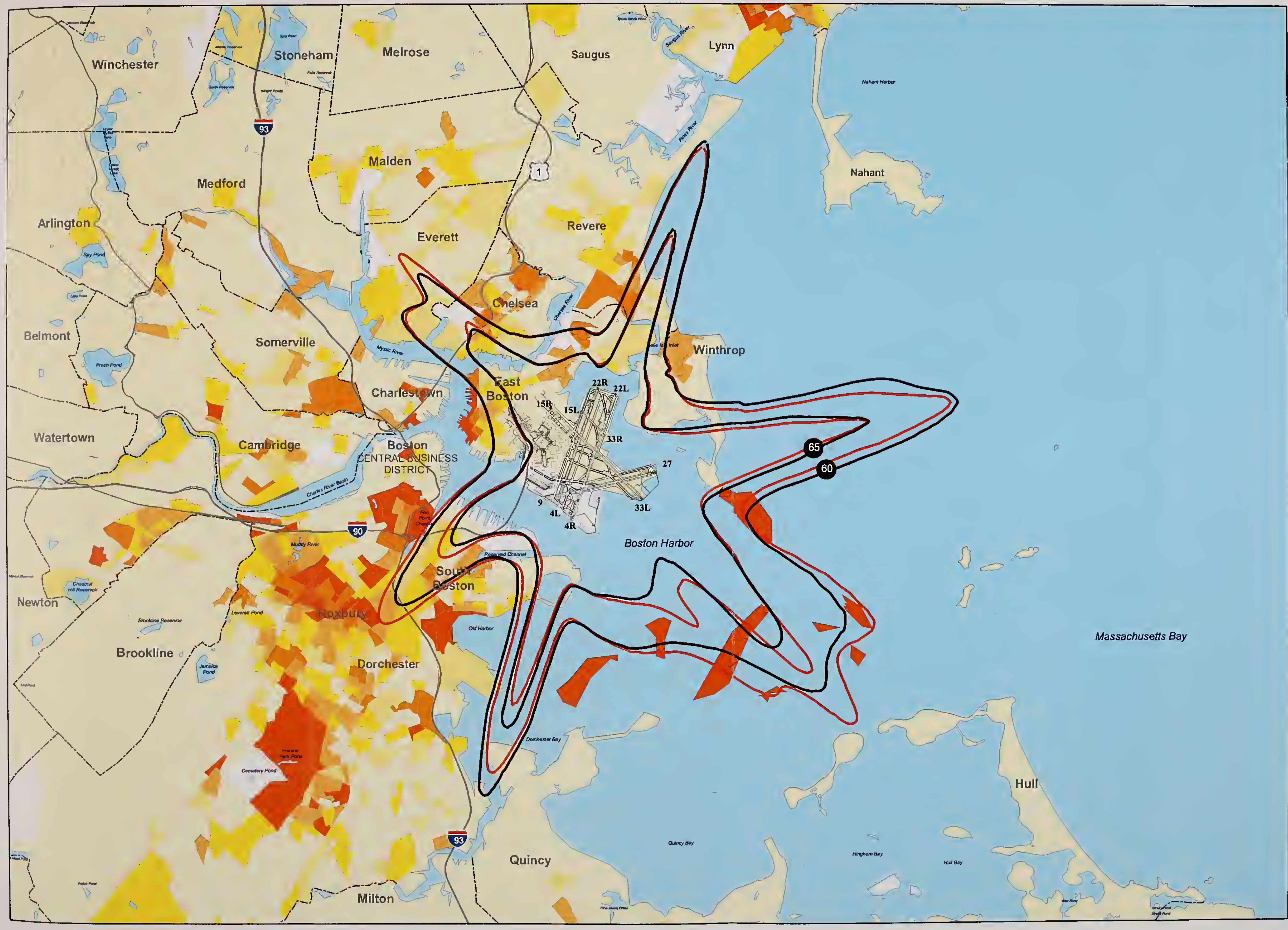
Implementation of the Preferred Alternative would not have a significant impact on low-income populations, since 98 percent of the affected population within the 65 dB DNL contour has a household income greater than $15,840 (150 percent of the federal poverty level). The total population within the 65 dB DNL contour under the 29M Low Fleet scenario with a household income of less than $10,560 is 18 persons for both the No Action Alternative and Preferred Alternative, which represents 0.1 percent of the total affected population. The affected population with household incomes less than $15,840 increases slightly under Preferred Alternative to 1.9 percent, but is still a very small percentage of the affected population as a whole. Both percentages are

significantly lower than the percentage (18.1 percent) of the population of Suffolk County below the poverty rate. (See Tables 6.8-6 and 6.8-7 for a more detailed comparison of the affected low income population within the 65 dB DNL contour for the Preferred and No Action Alternatives, respectively.)

A similar conclusion can be reached when comparing the affected low-income populations within the 60 dB DNL contour for the No Action and Preferred Alternatives. Approximately 0.07 percent of the affected population within the 60 dB DNL contour for No Action Alternative has a household income of less than $10,560. This increases slightly to 0.9 percent of the population for the Preferred Alternative primarily due to the inclusion of the institutional population on Long Island within the 60 dB DNL contour. The percentage of the affected population within 60 dB DNL with household incomes less than $15, 840 is 8.0 percent for the No Action Alternative and increases slightly to 10.1 percent for the Preferred Alternative. These percentages of low-income populations within the 60 dB DNL contour for the Preferred Alternative are lower than the percentage of the population of affected jurisdictions (Boston, Chelsea, Everett, Revere, and Winthrop) classified as below the poverty level (See Table 6.8-1) (See Tables 6.8-9 and 6.8-10 for a more detailed comparison of the affected low income population within the 60 dB DNL contour for the No Action Alternative and Preferred Alternatives, respectively).

The noise effect of the Preferred Alternative does not represent a disproportionate impact to low income populations because it is not predominately borne by that population. The environmental justice analysis indicates that the population within the 65 dB DNL contour is not predominately low-income. Less than 0.1 percent of this population is at poverty level ($10,840), and only 1.9 percent have incomes below 150 percent of poverty level ($15,584) based on 1990 census data. (Estimates of 1995 income levels by community were not available.) In addition, the noise impact suffered by the minority population is not appreciably more severe or greater in magnitude than the adverse effect suffered by the non-minority population. There are no low-income populations within the 75 dB DNL and 70 dB DNL contours under the Preferred Alternative.

Figure 6.8-2 illustrates the relationship of the 60 and 65 dB DNL noise contours for the No Action and Preferred Alternatives to the low income populations within the communities adjacent to Logan.



massport

Figure 6.8-1

1990 Median Household Income by Block Group

Source: Harris Miller Miller & Hanson

Figure 6.8-2

Percent Minority Population by Census Block

Source: Harris Miller Miller & Hanson

6.8.5.3 Comparison of 1998 and No Action Alternative Noise Affected Population

The 1998 GEIR Annual Update presented noise contours for Logan Airport based on aircraft activity during 1998. In that year, the population within the 65 dB DNL contour was approximately 23,300. Comparison to the projected noise contour for the 29M Low Fleet scenario No Action Alternative shows a substantial reduction in the population exposed to 65 dB DNL. Under the 29M Low Fleet scenario No Action Alternative projections, total population exposed to 65 dB DNL or greater is approximately 17,500 persons, representing a 25 percent decline from reported 1998 levels.

The principal reason for this decline in overall airport noise impacts is the continuing phase out of noisier Stage 2 jet aircraft from the Logan Airport fleet. Secondarily, improved adherence to the Runway 27 ROD departure track will eliminate significant numbers of South Boston residents from the 65 dB noise contour. Both these developments are discussed in Chapter 5 of the 1998 GEIR Annual Update.

In addition to the predicted population reductions within the 1998 65 dB DNL contour that will occur as noted above, the Preferred Alternative will redistribute aircraft activity and their associated noise impacts over Boston Harbor. The proposed project will facilitate greater use of Runway 15R/33L in accordance with the PRAS goals. This will result in increased use of over water routings and will shift noise impacts from areas north and south of Logan Airport to areas east and west of it. However, these flight shifts will increase the number of Chelsea residents included in the 65 dB DNL noise contour. To mitigate these impacts, Massport and FAA will sound insulate the homes newly included in the project's 65 dB DNL contour. In addition, Massport and FAA will continue their residential sound insulation efforts for all residences within the 1998 65 dB DNL contour.

6.8.6 Other Environmental or Human Health Considerations

The Council on Environmental Quality (CEQ) asks federal agencies, to the extent practicable, to consider the following when assessing environmental justice impacts:

- Whether health effects [of the proposed action] are significant or above generally accepted norms;
- Whether the risk or rate of exposure to an environmental hazard [caused by the proposed action] is significant or appreciably exceeds the risk or rate of exposure to the general population;
- Whether health effects [of the proposed action] occur in minority or low-income populations [already] affected by cumulative or multiple adverse exposures from [other] environmental hazards;

- Whether [the proposed action] will cause significant impacts on the environment that adversely impact affected populations;

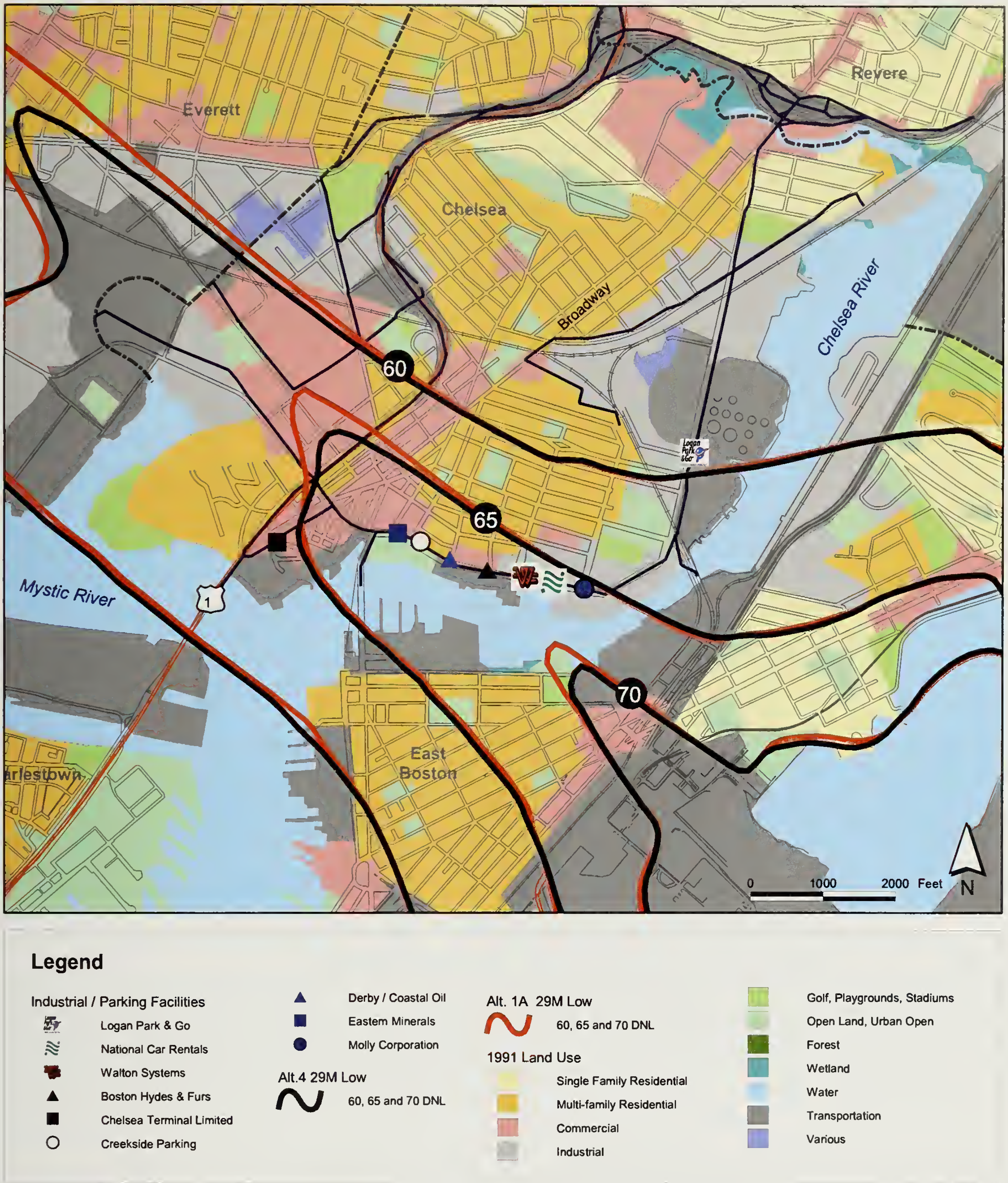
- Whether a significant, adverse impact on a minority or low-income population appreciably exceeds [similar] impacts on the general population; and whether the environmental effects occur in minority or low-income populations [already] affected by cumulative or multiple adverse exposures from [other] environmental hazards.

Environmental and health studies relating to the City of Chelsea have been reviewed in an effort to assess other cumulative or multiple adverse exposures within the affected minority population. Although demographic analysis has found no disproportionately high and adverse effect from direct project impacts, an analysis of these additional factors for the City of Chelsea was conducted since the area added to the 65 dB DNL contour under the Preferred Alternative includes this community. A summary of these studies follows.

Chelsea is a small (2.1 square mile) city with an ethnically diverse population. It is bounded on the north by the City of Everett, on the east by Mill Creek and the City of Revere, on the south by Chelsea Creek and East Boston, and on the west by the Mystic River and Charlestown. Access from Chelsea to East Boston is provided via the Chelsea Street and McArdle Bridges and to Charlestown and Downtown Boston via the Tobin Bridge, which carries Route 1 over the Mystic River. Designated truck routes through the City of Chelsea include Route 1, Beacham, Williams and Marginal Streets, Eastern Avenue, and parts of Broadway. Additional streets designated for truck traffic include Second and Spruce Streets and parts of Everett Avenue, as well as Gerrish Street and Crescent Avenue.

Approximately one-third of Chelsea's land area is commercial or industrial land that is either currently in industrial use or once housed heavy industries. Many of these sites are vacant or underutilized properties that border residential areas.[19] Much of the industrial property is concentrated on the waterfront along Marginal Street and Eastern Avenue. Chelsea is home to numerous oil and fuel storage facilities as well as industrial facilities that utilize toxic materials in their manufacturing processes. Given these characteristics, many of the environmental issues identified in Chelsea center on toxic discharges associated with industries in Chelsea and contamination of Chelsea Creek. Figure 6.8-3 illustrates Chelsea land use and environmental issues in relationship to the 29M Low Fleet scenario 65 dB DNL noise contours.

19 US Environmental Protection Agency, Brownfields Assessment Demonstration Pilot, Chelsea, MA, May 1998.



Source: Harris Miller Miller & Hanson

Figure 6.8-3
Chelsea Land Use and Environmental Issues
29M Low Fleet Scenario
65 dB DNL Noise Contours

6.8.6.1 Industrial Pollution and Brownfields Initiatives in Chelsea

Industrial Pollution

The Massachusetts Department of Environmental Protection lists approximately 50 21E sites in Chelsea with some degree of oil or hazardous material contamination and approximately 115 spill incidents identified in accordance with the provisions of the Massachusetts Contingency Plan (310 CMR 40.000). (See Appendix I for a list of DEP sites.) There are no US Environmental Protection Agency Superfund sites in Chelsea, although the former Forbes Lithographic Company on Marginal Street is listed as a site awaiting a National Priority List (NPL) decision.

A survey by the Massachusetts Toxics Campaign Fund examined the extent of industrial pollution in Chelsea and its possible relation to the socioeconomic status of Chelsea residents.[20] The survey revealed that the most significant industrial pollution sources in Chelsea are found in the city's eastern sections in close proximity to residential neighborhoods, and in the sparsely populated western industrial section. The survey also recognized that higher levels of pollution appear to be present in neighborhoods with a higher percentage of low-income residents or minority populations. According to the survey, the census tract with the highest percentage of people of color living below the poverty line (census tract 1605) experienced the highest level of continuous toxic releases. In addition, the survey concludes that the two census tracts with the highest percentage of Hispanic residents (census tracts 1602 and 1604) demonstrated a higher incidence of toxic releases than other parts of the city.

The survey recommended that public access to information on industrial toxic hazards needs to improve, and that a closer examination of such hazards in close proximity to residential neighborhoods and schools be conducted. This survey did not compare industrial toxic release findings of Chelsea with other exposures in other communities.

Brownfield Initiatives

EPA has selected the 43 acre Everett Avenue Urban Renewal District in Chelsea as a Brownfields Assessment Demonstration Pilot. The objective of the project is to assess and plan for the clean up of the area in order to encourage redevelopment of the site. An EPA grant was also provided to STRIVE-Boston Employment Services, Inc. for a Brownfields Job Training Development Demonstration Pilot to train 60 low-income participants from Chelsea as environmental technicians.

20 The Massachusetts Toxics Campaign Fund, *Industrial Pollution in Chelsea*, 1998.

6.8.6.2 Community Initiatives

There are numerous community groups active in environmental initiatives, including the Chelsea Human Services Collaborative/Green Space and Recreation Committee, and the Chelsea Creek Action Group, a coalition of the East Boston Ecumenical Community Council, Neighborhoods for Affordable Housing, and the Chelsea Human Services Collaborative/Green Space and Recreation Committee.

The Chelsea Human Services Collaborative was awarded an EPA Educational Grant in 1997 to provide educational outreach programs focused on environmental issues in Chelsea. This organization also received an EPA Environmental Justice Grant in 1998 to halt the expansion of and to address environmental and public health hazards associated with the 100,000-ton Eastern Minerals rock salt receiving, storage and distribution site located on Chelsea Creek. The Chelsea Human Services Collaborative also produced a series of maps that illustrate demographics, land use, industrial facilities, and pollution sources in Chelsea.

6.8.6.3 Other Environmental Documents

Environmental documents filed with the Massachusetts Environmental Policy Act (MEPA) Office relative to projects in Chelsea for the period from 1989 to the present (September 30, 1999) were also reviewed. Of those projects, only the following three resulted in the submission of an EIR:

- EOEA # 10335 - Massachusetts Water Resources Authority Combined Sewer Overflow
- EOEA# 9146 - Parking Garage, 270 Central Avenue
- EOEA# 8695 - Boston Harbor Dredging Project, Berthing Areas

The majority of the ENFs for Chelsea filed with MEPA were for new public buildings or infrastructure improvements. (See Table 6.8-11 for a list of other environmental documents filed with MEPA.)

6.8.6.4 Public Health

In addition to environmental effects, EO 12898 also directs federal agencies to consider adverse human health effects of its programs, policies and activities. CEQ guidelines direct agencies to consider relevant public health data to the extent that such information is reasonably available.

Table 6.8-11
Environmental Documents Filed with MEPA

EOEA No.	Project Name	Certificate Date	Location
11511	Everett Avenue Urban Revitalization	April 10, 1998	Everett Avenue, Chelsea
11476	Chelsea Police Station Renovation	March 13, 1998	19 Park Street, Chelsea
11068	Chelsea Parking Project	September 8, 1997	Eastern Avenue, Chelsea
10980	Chelsea Street Movable Bridge	January 9, 1997	Chelsea Street Bridge, Chelsea
10311	Chelsea Early Learning Center at the Shurtleff School	May 10, 1995	76 Congress Street, Chelsea
10100	Proposed Dredging in Chelsea River/ Eastern Minerals/ SMP Trust	January 13, 1995	37 Marginal Street, Chelsea
9981	Chelsea Middle School Project	June 23, 1994	170-180 Walnut Street, Chelsea
9810	Chelsea High School	March 10, 1994	Carter Street at Everett Avenue, Chelsea
9750	Chelsea Elementary Schools Campus	January 21, 1994	399 Eastern Avenue, Chelsea
9487	New Chelsea Court House	August 9, 1993	Williams Street, between Chestnut Street and Broadway, Chelsea
8876	Bridge Protection and Navigation Improvements Project	December 23, 1991	Boston Inner Harbor at Tobin Bridge
8806	Revere Water Transmission Main Project	October 10, 1991	Chelsea: Hy-Sil Avenue, Reservoir Avenue, Carrol Way, Prospect Avenue, Broadway
8418	Maintenance Dredging at Three Marine Terminals	November 23, 1990	99 Marginal Street, Chelsea 22 Lee Burbank Highway, Revere - 900 First Street, South Boston
8329	Northeast Petroleum	August 10, 1990	324 Marginal Street, Chelsea

In response to EO 12898, public health issues in Chelsea were researched. Local[21] and state[22] public health agencies, as well as EPA Region 1 staff[23], [24] were interviewed, and it was determined that there are no published studies relative to public health issues in Chelsea. The Massachusetts General Hospital, Memorial Health Center in Chelsea is collecting information regarding asthma, but such information has not been published.[25] The only information available for Chelsea was a summary public health profile prepared by the Institute for Health Policy, Massachusetts General Hospital/Partners Healthcare System. This report indicated that in the period from 1989 to 1997, hospital discharges for asthma for Chelsea residents declined from a high of 433.1 per 100,000 population in 1992, to a low of 244.9 per 100,000 population in 1997. However, the 1997 rate of 244.9 for Chelsea residents was still higher than the Massachusetts average rate of

21 Telephone conversation with Frank Singleton, Chelsea Public Health Department, September 10, 1999.
22 Telephone conversation with Benson Chin, Health Policy Analyst, Massachusetts Department of Health ,Division of Health Care Finance and Policy, September 21, 1999
23 Telephone conversation with Peg Nelson, Head Librarian, EPA Region 1 library, September 14, 1999
24 Telephone conversation with Dr. Mary Beth Smuts, Health Department, EPA Region 1, September 30, 1999
25 Telephone conversation with Ruth Gomez, Asthma Coordinator, Chelsea Memorial Health Center. September 30, 1999

135.5 for the same year.[26] Additional public health information on the City of Boston and other communities was found to be available and is presented in Section 6.8.7 for informational purposes.

Interviews with local community groups indicate that there are public health concerns about emissions from private-sector petroleum facilities along Chelsea Creek (especially those located near the Tobin Bridge/Marginal Street waterfront), with the burning of high-sulfur fuels at Boston Edison's Mystic Plant in Everett, and with emissions from diesel trucks that drive through Chelsea neighborhoods.[27]

The Chelsea Creek Action Group was awarded an EPA grant in March 1999 to conduct a two-year study of environmental and health risks for East Boston and Chelsea residents living near Chelsea Creek. The purpose of the study was to conduct a comprehensive outreach effort to ascertain from residents, physicians, public health experts and environmental leaders what their perspectives are about environmental and health risks in the Chelsea Creek area in order to help the communities prioritize actions that can reduce those risks. A survey of residents in East Boston and Chelsea was conducted by the Chelsea Creek Action Group as part of Phase 1 of the comparative risk assessment to ascertain public opinion on issues regarding public health, the environment and quality of life. A total of 325 people were either interviewed or submitted surveys. A large number of people (124) did not respond to questions regarding their individual health or community health concerns (86). Air pollution was listed as the most frequent environmental concern (86 respondents), with cars, buses, airplanes and ships all mentioned as potential sources. Trash was listed second most frequently (65 respondents) as a concern. A little less than half of the residents responded to the information on quality of life issues and no particular quality of life issue was identified as more important than others.[28] Phase II of the study involves a resident community group further defining the major issues to address by incorporating the results of the survey and additional technical information provided by the EPA, state and city agencies. Phase II is anticipated to be completed by the end of 2001, with a final report and possible action plan by March 2002. [29]

Community health studies funded by Massport have addressed health issues relating to lead paint use in Chelsea. The studies have shown that elevated blood lead levels in children are associated with the presence of lead paint on or in residential units. Massport stopped using lead-based paint on the Tobin Bridge in 1977, and instead utilized an organic zinc-based paint as a substitute. Portions of the lead paint on the bridge were removed via grit blasting that utilized a vacuum system to remove and collect lead paint particles and grit so that they would not be released to the community. Massport financially supported a Chelsea community organization (CAPIC) that was

26 2000 Chelsea Public Health Profile, A Report from the Institute for Health Policy, Massachusetts General Hospital/Partners Healthcare System and MGH Community Benefit Programs, no date. Provided by Luis Prado, Director, Chelsea Health and Human Services Department, 1/22/01.
27 Conversation with Roseanne Bongiovanni, Chelsea Human Services Collaborative. October 4, 1999
28 Chelsea Creek Action Group, *Comparative Risk Assessment Stage 1 Report (Survey & Questionnaire)*, no date.
29 Telephone conversation with Susan Loucks, Chelsea Creek Action Group Project Coordinator, January 23, 2001.

conducting studies of elevated blood lead levels in children. Children and pregnant women living near the Tobin Bridge were tested, and those children with elevated blood lead levels were given medical treatment. In no cases were the blood lead levels a result of the painting process or lead flaking from the bridge. Rather the elevations were due to the presence of lead paint on or in residential units. Houses where lead paint was identified were eventually deleaded.

Massport also conducted an extensive soil removal program in areas near the bridge with elevated soil lead levels, regardless of the source of the contamination. Contaminated soils were replaced with clean soil and the area revegetated. Lead levels in the soil are monitored annually.

Currently, Massport utilizes an aluminized epoxy paint system that requires less removal of lead paint and employs power tool cleaning instead of grit blasting. All painting operations are carefully monitored for particulate emissions as well as air lead levels.

6.8.7 Other Public Health Studies

The available public health studies for communities adjacent to Logan Airport were reviewed, consistent with the directives of CEQ Guidance. Public health status reports prepared by the Boston Department of Health and Hospitals and the Boston Public Commission were available for the City of Boston. Comparable public health reports were not available from the Public Health Departments of Chelsea,[30] Revere,[31] and Winthrop.[32] The available studies are summarized below for informational purposes.

Boston Neighborhood Health Status Report, Boston Department of Health and Hospitals (1994)

This series of reports identifies and discusses health-related issues for each of Boston's sixteen neighborhoods. These reports compare reportable data relative to births (natality), deaths (mortality) and illness (morbidity) to the demographics/ socio-economics of each of the neighborhoods and to the City of Boston as a whole. They are intended to provide a broad picture of the health of the community, as opposed to a study correlating human health to other environmental factors. For example, no correlation between air pollution and public health was made. Health status indicators were also compared to federal U.S. Department of Health and Human Services goals set forth in *"Healthy People 2000: National Health Promotion and Disease Prevention Objectives."* A summary of key findings for the neighborhoods closest to the airport, East Boston and South Boston, are presented below:

30 Telephone Conversation - Frank Singleton, Chelsea Public Health Department, 9/10/99.
31 Telephone Conversation - Francis Hyland, Revere Public Health Department, 9/10/99 /Telephone conversation with Nicolas Catinazzo, Revere Public Health Department, 1/19/01.
32 Telephone Conversation -Bea Farnham, Winthrop Public Health Department, 9/14/99/ Telephone conversation with Bea Farnham, Winthrop Public Health Department,1/23/01.

- **East Boston**—East Boston contained approximately 5.7 percent of the City of Boston's residents in 1990. The top five leading causes of death in East Boston were: heart disease, cancers, accidents, pneumonia/influenza and liver disease. The age adjusted rate (AAR) of cancer deaths per 100,000 in East Boston was 134.5, which is close to the Healthy People 2000 goal of 130 deaths per 100,000 population. East Boston has a lower rate of cancer deaths than Boston as a whole, which has an AAR for cancer deaths of 157.0. The overall standard mortality ratio for the East Boston population was 0.86, indicating that fewer deaths occurred in East Boston than expected when compared to the mortality in Boston as a whole.

- **South Boston**—South Boston contained approximately 5.1 percent of the City of Boston's residents in 1990. The top five leading causes of death in South Boston were: heart disease, both cerebrovascular disease (strokes) and accidents, chronic obstructive pulmonary disease and pneumonia/influenza. The age adjusted rate (AAR) of cancer deaths per 100,000 in South Boston was 198.3, which is higher than the AAR for cancer deaths of 157.0 in Boston, and the Healthy People 2000 goal of 130 deaths per 100,000 population. The standard mortality ratio for the South Boston population was 1.32 indicating that 32 percent more deaths occurred in South Boston than expected when compared to the mortality in Boston as a whole.

Report to the Mayor, Health of Boston (1999, 2000)

The *Health of Boston* is an annual public health assessment to provide the local government and general public with an overview of health issues and problems that affect the Boston population. The information in this report is used by the Boston Public Health Commission to assist in the establishment of public health priorities for the present and future. The report is organized by health care subject, such as lung cancer, breast cancer, suicide, infant mortality, HIV/AIDS, cigarette smoking, health insurance and adolescent pregnancy. This report does not present health issues in relation to specific environmental conditions.

The *Health of Boston 1999* reported that the leading cause of death in the city was cancer, followed by heart disease, injury, cerebrovascular disease (stroke) and homicide. Even though it was the top cause of death, cancer-related mortality decreased by 4.7 percent between 1991-1994 and 1995-1997. The age-adjusted lung cancer mortality rate in Boston decreased by 10.9 percent for the same period.

Cancer, heart disease and injury remained the top three causes of death, but HIV/AIDS and substance abuse were reported as the fourth and fifth leading causes of death in the *Health of Boston 2000*. Cancer–related mortality continued to decline, with a 5.2% decrease in between the periods of 1993-1995 and 1996-1998. The lung cancer age-adjusted mortality rate of 41.7 deaths per 100,000 population is 6.9 percent below the Healthy People 2010 target rate goal of no more than 44.8 deaths per 100,000.

The 1999 report presented the status of environmental health issues in Boston, specifically childhood lead poisoning and asthma. Asthma is a chronic inflammatory lung disease characterized by recurrent and reversible symptoms of airflow obstruction. House dust mites, cockroaches, mold, and animal dander have been identified as the principal allergens that trigger asthma symptoms. Secondhand smoke, upper respiratory viral infections, and certain air pollutants can also trigger an attack and worsen the effects of allergens. Asthma is the ninth leading cause of hospitalizations in the United States. Approximately 6.5 percent of the population in Massachusetts were estimated to have asthma in 1998. Boston residents had an average annual rate of asthma hospitalizations (3.5 per 1000 residents) that was double the rate for all Massachusetts residents, with children having the highest rates. The two neighborhoods with the highest rates of asthma in 1997 based on administration of the drug albuterol by Emergency Medical Technicians were Dorchester (30.5 percent) and Roxbury (21.0 percent), followed by Jamaica Plain (9.4 percent) and Mattapan (9.0 percent). East Boston and South Boston each accounted for 4.3 percent of the albuterol incidents.

The 2000 report indicated that over time, asthma hospitalization among children has declined in Boston, despite an increase in the overall incidence of childhood asthma. The number of Boston residents under 18 that were hospitalized for this condition in 1998 fell 11.0% in one year, from 636 in 1997 to 566 in 1998. Children under five had the highest rates of asthma hospitalization, with males more likely than females to be hospitalized for asthma. Roxbury, South Dorchester and North Dorchester had the city's highest rate of asthma hospitalization for males under five years of age for the period of 1994 to1998, with a rate per 1,000 population of 18.6, 14.8 and 13.7, respectively. By comparison, the rate of asthma hospitalization for males under five years of age for the same period for East Boston was 9.5, and the rate for South Boston was 8.2. Roxbury, Jamaica Plain, North Dorchester, and the Fenway had Boston's highest rates of asthma hospitalization for females under five years of age, but these rates were lower than for males of the same age.

South Boston Particle Source Apportionment Study by the Harvard School of Public Health

This ongoing study is attempting to characterize air quality within the South Boston community by measuring particulate matter and gaseous pollutants. The purpose of the study is to identify and assess the contribution of various air pollution sources through air monitoring and modeling, provide data for the purposes of health effects assessment, and to recommend measures to improve air quality within the community in a cost-effective manner.

An air pollution monitoring study was conducted during the period of January 1995 through March 1997 that measured particulate matter 10 micrograms or less in diameter (PM_{10}), and particulate matter 2.5 micrograms or less in diameter ($PM_{2.5}$). Initial results of the study indicate that the majority of fine particles ($PM_{2.5}$) observed at the Boston monitoring sites are associated mostly with sources located outside of the Boston metropolitan area, and to a lesser extent with local motor vehicle emissions. Particulate and gaseous air pollutant concentrations observed during the study were typical of the

northeastern United States. In addition, the two-year average particulate concentration levels experienced in South Boston were lower than those experienced in other Northeastern urban environments, such as Washington, DC, Philadelphia, PA, and Nashville, TN. The highest average fine particle concentrations in South Boston were found at the monitoring site adjacent to the Southeast Expressway (I-93). [33]

Winthrop Community Health Survey

The July 1999 survey by the Winthrop Environmental Health Facts Subcommittee, a voluntary group made up of residents of the Town of Winthrop, studied whether activities at Logan Airport have a negative impact on their health. The survey indicated that individuals residing in Winthrop neighborhoods surrounding Logan Airport show a considerably higher incidence of respiratory and cardiovascular diseases, including lung cancer, chronic obstructive pulmonary disease, asthma and allergic rhinitis, compared to the statewide average. The survey acknowledged that it has not been possible to determine whether Logan Airport operations contribute to this health burden, since the urban location of these communities presents a complex picture of pollution sources.

The methodology utilized in the survey included dividing the town into ten neighborhoods. Two neighborhoods were selected as likely representing areas of highest and lowest exposure. A questionnaire was devised and interviews conducted on diagnosed illnesses, symptoms, frequency and smoking history. The survey stated that individuals in the presumed high exposure zones experienced approximately twice the frequency of symptoms when compared with the presumed low exposure group. The survey also recognized that the true difference in exposure to airborne pollutants between the low and high exposure groups is not known, the total sample size is small, and that it cannot claim to have proven an association between airport-related pollution generation and respiratory disease in Winthrop.

The Massachusetts Department of Public Health, Bureau of Environmental Health Assessment reviewed the results of the Winthrop Health Study and concluded that while the study raised interesting questions, the methodology used to conduct the study and interpret the results limited the validity of the conclusions which were drawn by the investigators.[34]

Massachusetts Department of Public Health/Bureau of Environmental Health Assessment Public Health Study

Language in the 1999 state budget states that "$150,000 shall be expended for the purpose of the Director of Environmental Health Assessment to conduct an environmental assessment of the health impacts of Logan Airport on any community that is located within a five-mile radius of the airport and is potentially affected by said airport."

33 Harvard School of Public Health, *Report on Initial Findings from the South Boston Air Quality Monitoring Study*, March 26, 1999.
34 Letter from Susan K. Condon, Director, Bureau of Environmental Health Assessment to William P. Frazier, Director, Department of Health, Town of Winthrop dated January 5, 2000.

The Massachusetts Department of Public Health/Bureau of Environmental Health Assessment (BEHA) proposes to study the relationship between air pollution and public health, focussing on respiratory and cardiovascular effects for communities within a five-mile radius of Logan Airport. BEHA will examine human exposures to jet fuel emissions, particulate matter and meteorological factors, as well as behavioral (e.g. cigarette smoking), occupational, and construction-related exposures. Other potential area sources such as rental car and vehicle service and maintenance facilities will also be examined. A series of meetings with communities within the study area as well as with Massport were held during the summer of 2000 to discuss the scope and methodology for the study. The final protocol for the study is being developed and the study is expected to be completed in the summer of 2002.

Massport's Participation in Air Quality/Public Health Studies

Massport has been cooperating with the City of Boston and the Commonwealth of Massachusetts on public health issues. In September 1995, the Secretary of the Executive Office of Environmental Affairs (EOEA) established a Scope for the analysis of potential environmental impacts of airport-related air emissions. In response to EOEA's directive, Massport consulted with both the Massachusetts Department of Public Health and the Boston Department of Health and Hospitals. Discussions focused on addressing general community concerns and determining the nature and extent of follow-up required to identify potential sources of air emissions.

In January 1996, Massport reviewed available public health data, including mortality and morbidity data from each neighborhood report and cancer incidence data available from the Massachusetts Department of Public Health. These data indicated that causal relationships cannot be determined at this time, a conclusion which was confirmed by state and local agencies with public health expertise.

Massport has provided public health agencies with off-airport air quality monitoring data, results from monitoring conducted by the Massachusetts Department of Environmental Protection (DEP) adjacent to the Sumner Tunnel entrance, and emissions inventories compiled for the Logan Airport GEIRs and Annual Updates.

Massport prepared the Soot Deposition Study[35] and shared the findings with the Boston Public Health Commission and the state Department of Public Health. That study indicated that there were no ongoing, chronic soot impacts from airport-related activities and that soot deposition in communities adjacent to Logan Airport resulted primarily from ambient urban conditions, as opposed to aircraft sources at the airport.

35 *Soot Deposition Study: Logan Airport and Surrounding Communities*, prepared for Massport, prepared by: KM Chng Environment, Inc. January 1997.

Since the completion of the *Boston-Logan International Airport 1994/1995 Generic Environmental Impact Report*, Massport has continued discussions with public health agencies, and attended meetings and reviewed results from the *South Boston Particle Source Apportionment Study*, sponsored by the Harvard School of Public Health (HSPH). Massport is also cooperating with the Massachusetts Department of Public Health/Bureau of Environmental Health Assessment in the development of the protocol for the Logan Airport public health study. Massport will continue to facilitate monitoring of airport-related emissions by HSPH and DEP by assisting in monitoring site selection and providing agencies with air quality data, airport activity data and meteorological data.

6.8.8 Mitigation and Off-Setting Benefits

In making a determination regarding disproportionately high and adverse effects on minority and low-income populations, the Final US DOT Order directs FAA to take into account mitigation and enhancement measures as well as all off-setting benefits to the affected minority and low-income populations.

Mitigation

Noise has been identified as the only impact to surrounding communities associated with implementation of the Preferred Alternative. While the noise impact in Chelsea falls below the FAA threshold for identifying significant adverse impacts, Massport and the FAA recognize the high representation of low-income and minority populations within Chelsea, and the presence of pre-existing environmental conditions within the community that are unrelated to Logan. In recognition of these factors, Massport and the FAA are committing to providing sound insulation to all Chelsea residents newly included in the project's 65 dB DNL contour.

Noise impacts will be mitigated by sound insulating affected residences in Chelsea that fall within the 65 dB DNL contour for the Preferred Alternative as defined by the 29M Low Fleet scenario. To the extent that federal funding is provided, the proposed sound insulation program will include not only all residences that fall within the Preferred Alternative 's 65 dB DNL contour when compared to the Airside No Action 65 dB DNL contour, but also those that fall within the actual 1998 65 dB DNL contour as presented in the *Logan Airport 1998 Annual Update*. The number of dwelling units in Chelsea to be sound insulated is estimated to be 1,100 to 1,200 dwelling units. For the eligible residences, the FAA will fund building code upgrades, to the extent necessary to implement sound insulation. The number of residences to be included within the noise mitigation program is subject to a more detailed block by block analysis to be performed during implementation.

Off-Setting Benefits

The benefits associated with Logan Airport are provided without regard to race, creed, color, or economic status, and include the transportation services provided to passengers flying in and out of Logan, as well as jobs and economic benefits to Boston and other communities adjacent to the airport.

Logan Airport is a significant contributor to the economy and a major employer for the metropolitan region. According to a 1995 survey, approximately 14,551 persons were employed at the airport.[36] Of those employed at Logan, the largest percentage (18.5 percent, or 2698) live in the City of Boston, with most (1230) living in East Boston. Other communities with significant employment at Logan Airport include Revere (1225), Winthrop (884), Lynn (476), Peabody (357), Malden (354), Saugus (346), Chelsea (294), Everett (283), and Salem (210). These ten communities account for 49 percent of the employment at Logan.

Logan Airport is an essential component of the economic health of both the Metropolitan Boston area and the New England region. The regional economy is largely comprised of a mix of travel-intensive service industries, including high-technology, financial services, and tourism, that depend upon high-quality air transportation services. It is estimated that the annual contribution of Logan Airport to the economy is $5 billion of direct and indirect local spending.[37]

As part of the Logan Airside Improvement Project, Massport is taking initiatives to promote Chelsea's greater participation in the economic benefits of Logan. Currently, approximately 294 residents of Chelsea are employed at Logan. In an effort to increase the level of airport employment of Chelsea residents, Massport will encourage airport-based employers to recruit employees from, and conduct job training initiatives targeted at airport affected communities including Chelsea. Massport also proposes to work with the Chelsea Chamber of Commerce to establish business connections with Chelsea businesses.

Massport is also facilitating increased airport employment opportunities and other economic initiatives for Chelsea. Currently, Massport provides to Chelsea $500,000 in annual in-lieu-of-tax payments; $500,000 in economic development grants; and approximately $70,000 in annual grants for student summer employment programs, scholarships, athletic, elderly and educational programs. In addition the $300,000 Chelsea Gateway Beautification Project that will landscape the entrances to the City of Chelsea from the Tobin Bridge is expected to begin construction in the spring of 2001.

36 1995 Logan Employment Survey, Massachusetts Port Authority.
37 Fiscal 1998 Logan Economic Impact Study, Massachusetts Port Authority.

6.8.9 Public Participation Process

6.8.9.1 Public Participation Directives

Under NEPA and the federal Environmental Justice policy, agencies should work to ensure that public documents, notices, and other information relating to impacts of the proposed action on human health and the environment are concise, understandable, and readily available to the public, including minority and low-income populations. Public participation should occur early in the NEPA process and should continue through scoping, draft, and final EIS phases. Environmental justice review should heighten attention to Alternatives, mitigation strategies, monitoring needs and preferences expressed by the affected community or population. Pursuant to the Final US DOT Order, meaningful opportunities for public involvement by members of minority populations and low-income populations are to be provided during the planning and development of activities. Additionally, access to public information concerning the human health and environmental impacts of activities, including information that will address the concerns of minority and low-income populations, is to be provided.

6.8.9.2 Public Participation for the Airside Improvement Project

Since the initial scoping[38] of the proposed Logan Airside Improvement Project, and throughout each phase of the environmental review process, FAA and Massport have established a dialogue with community leaders and the public through public hearings, briefings, responses to comment letters, and circulation of the Airside Project Draft EIS/EIR for public review and comment.[39] Over 700 copies of the Airside Project Draft EIS/EIR were distributed for public review including copies sent to the Chelsea Human Services Collaborative, the Centro Hispano de Chelsea, and the Chelsea Commission on Hispanic Affairs. Copies of the Airside Project Draft EIS/EIR were also distributed to every public library in each of the 28 communities represented on the CAC. Approximately 1,300 comment letters were received on the Airside Project Draft EIS/EIR.

Over 100 meetings, designed to elicit participation from community leaders and the public at large, have taken place since the project scoping. To encourage participation Massport conducted meetings in more than 15 communities surrounding Boston and Logan, including Chelsea, Winthrop, East Boston, South Boston, Charlestown, Revere, Jamaica Plain, Milton, Dorchester and Roxbury.

▼

38 Massport, Proposed Scope: Airside Project Draft EIS/EIR Logan Airside Improvement Planning Project" (The initial stage of this evaluation is a planning effort that is designed to use the operations and environmental analysis, and related public input process to further assess the efficacy and interrelationship of the various improvement concepts.) (1995).

39 66 comment letters were received in response to the Environmental Notification Form (ENF). *See* Commonwealth of Massachusetts Executive Office of Environmental Affairs, Certificate of the Secretary of Environmental Affairs on the Environmental Notification Form for Logan Airside Project improvements Planning Project EOEA #10458 (Nov. 22, 1995). Response to comments on the ENF were provided in Volume II of the Logan Airside Project improvements Planning Project, Airside Project Draft EIS/EIR.

The Airside Review Committee (ARC) was formed in December 1995, to provide advisory input from the community to Massport and the FAA. The ARC consists of the Logan Airport Citizens Advisory Committee (CAC) to Massport and representatives of regional business and aviation organizations. The CAC is comprised of representatives from 28 neighborhoods, cities and towns. The ARC has met 15 times since it was formed, providing an exchange of ideas and concerns at every stage of the project development process, and there have been approximately 15 additional meetings with the CAC that Massport staff have attended. Extensive information about the proposed action and its environmental impacts was presented to the ARC by agency staff and consultants, and ARC members commented, questioned, and discussed their concerns with technical presenters and Massport planning staff.

Presentations to the public were provided in various formats, from briefings to large public meetings. For example, Massport provided a briefing to Chelsea community leaders on January 19, 1999. There were approximately 35 people in attendance, including members of the Chelsea City Council, and representatives of community groups. At the March 3, 1999 Chelsea City Council public hearing, over one hundred citizens had the opportunity to speak and comment to Massport officials following a presentation of the proposed project; the meeting was broadcast on the local cable station. Consistent with FAA policy of providing translation on request, a Spanish-language interpreter was present at the February 23, 1999 meeting with the Latin American Planning and Development Group, at which representatives of the Chelsea Hispanic Community were present.

At public meetings and at the request of interested community members, Massport has provided full access to the public concerning the Logan Airside Improvements Planning Project and its associated social and environmental effects. At meetings, Massport and FAA officials have provided an overview of Logan Airport's current operations and the need for changes. In addition, they have described the impacts of proposed changes on particular communities and efforts to mitigate adverse noise impacts. Public participation has resulted in additional studies and refinement of the mitigation program. (See Chapter 8 for a discussion of mitigation.)

6.8.10 Summary of Findings

The Preferred Alternative is intended to reduce congestion and delay at Logan, and to increase the safety and efficiency of airport operations.

A disproportionately high and adverse effect means an adverse effect that is predominately borne by a protected population, or an adverse effect which is appreciably more severe or greater in magnitude in its impact on a protected population than on other populations which are also affected. The Final US DOT Order directs FAA to determine whether its programs, policies, and activities will have a disproportionately high and adverse impact on minority or low-income communities, taking account of mitigation, enhancement measures, and all off-setting benefits to the affected populations, as well as the design,

comparative impacts, and the relevant number of similar existing system elements in non-minority and non-low-income areas.

There is no disproportionate adverse impact associated with the Preferred Alternative. The increased exposure to aircraft noise is 0.6 dB or less in affected communities, which is below the FAA threshold for determining significant adverse impacts. Mitigation of the increased noise will be provided in the form of sound insulation.

In addition, off-setting economic benefits will be provided to Chelsea to help that community participate more fully in the economic benefits of Logan.

Taking account of the small incremental noise impacts within the affected areas, the proposed sound insulation and economic initiatives, the economic benefits of Logan Airport in which Chelsea residents will share, and the safety, operational, and environmental benefits of the Preferred Alternative to the population at large that are not achievable under other Alternatives, the Preferred Alternative will not have a disproportionate high and adverse impact on minority or low-income communities.

6.9 Construction Impacts

This section provides an overview and description of the proposed airside improvement construction activities and associated impacts. Construction activities associated with the Preferred Alternative include Runway 14/32 and the Centerfield Taxiway, as well as taxiway realignments and extensions associated with Taxiway Delta, Taxiway November and the configuration of the Southwest Corner. All construction phases and sequences would be carefully planned to ensure the continued safe and efficient operation of the airport, and the successful and timely completion of the project.

Potential impacts resulting from the construction of the Airside Project improvements Planning Project can be separated into two broad categories for discussion purposes: impacts on the direct users of the airfield, and impacts on the group consisting of the surrounding communities and other users of the airport in general. It is Massport's goal to avoid or to mitigate such impacts to the maximum extent possible.

The estimate of truck volumes presented in this Supplemental DEIS/FEIR is less than that presented in the Airside Project Draft EIS/EIR, which had assumed a worst case scenario. Since publication of the Airside Project Draft EIS/EIR, a subsurface investigation (boring) program was undertaken to characterize the suitability of the soils for construction of the Airside Project improvements. This investigation found that much of the existing soil material on the airport is suitable for construction, and thus the total estimate of soil to be excavated and removed from the airfield has been reduced. (See Section 6.7 for a more detailed discussion of soil characteristics.) This in turn reduces the amount of truck trips required for construction. In addition, the Airside Project Draft EIS/EIR had assumed that 215,000 cubic yards of soil stockpiled by the Massachusetts Highway Department Central

Artery Project (CA/T) on Governors Island would need to be relocated to construct Runway 14/32. However, this has been moved off-site for use as cover material to close the Rubchinuk Landfill in Middleton, Massachusetts. (See Section 5.7.2 for additional discussion.) Transfer of the approximately 240,000 cubic yards of the CA/T soil from Governor's Island was completed in November 2000. See Table 6.9-1 for excavate material quantities from Logan Airside Project improvements.

Table 6.9-1
Excavated Material From Construction of Logan Airside Project improvements

	Total Excavated Material * (cubic yards)	Unclassified Excavate Reused On Site (cubic yards)	Unclassified Excavate Removed from Site (cubic yards)	Existing Bituminous Pavement Removed from Site (cubic yards)
Runway 14/32	111,000	37,000	45,000	29,000
Centerfield Taxiway	52,000	41,000	11,000	0
Southwest Corner Taxiway	14,000	5,000	0	9,000
Taxiway November	55,000	500	43,000	11,500
Taxiway Delta	32,000	0	32,000	0
TOTAL	264,000	83,500	131,000	49,500

Source: HNTB 12/1/99
Includes soil and existing bituminous pavement.

6.9.1 Construction Elements of the Preferred Alternative

This section describes the individual construction elements of the Preferred Alternative. A summary of construction costs and duration of the Preferred Alternative, by individual construction elements, is presented in Table 6.9-2.

Table 6.9-2
Summary of the Preferred Alternative by Construction Elements

Construction Element	Construction Cost Estimate ($ millions)	Estimated Construction Period (Days[1])
Unidirectional Runway 14/32	33	300
Centerfield Taxiway	20	See Note 2
Southwest Taxiway System Reconfiguration	14	240
Taxiway Delta Extension	6	180
November Taxiway Realignment	3	180
TOTAL	$76	Phased over ± 5 years

1 Days are consecutive calendar days, inclusive of Saturdays and Sundays. Does not include winter construction shut down period.
2 Construction of the northern segment of the Centerfield Taxiway is estimated to take 180 days; construction of the southern segment of the Centerfield Taxiway is estimated to take 210 days. There is some overlap of the two construction periods.

6.9.1.1 Unidirectional Runway 14/32

This element involves the construction of a new 5,000-foot runway and associated taxiway. The runway would be 100 feet wide with two 35-foot wide paved shoulders. The project would also include reconstruction of 2,000 feet of existing pavement in the South Cargo Area for use as a taxiway to the Runway 14 end.

Construction of Runway 14/32 would require the removal of existing surface vegetation and approximately 29,000 cubic yards of pavement and 45,000 cubic yards of unclassified excavated soil material, which will be taken off-site for reuse/recycling. The subsurface investigation conducted in the area of the Airside Project improvements found that the soils in the vicinity of proposed Runway 14/32 are well drained and provide a suitable foundation for construction. Therefore, less soil material needs to be removed from the site than had been assumed in the Airside Project Draft EIS/EIR. A subbase and crushed aggregate base course will be placed prior to paving with a bituminous concrete mix. All aggregate base would be obtained from commercial sites rather than disturbed sites. Should Massport need to find new sites for aggregate base or sand materials, Massport will do so from sites that have undergone the appropriate environmental review and permitting processes. A runway/taxiway drainage system would be constructed and integrated into the existing airfield drainage system, and conduits for lighting and other instrumentation would be installed.

Construction of Runway 14/32 would require demolition of Buildings 60 and 61 in the South Cargo area, which together have a total footprint of 155,000 square feet. Both buildings are essentially large hangar-type spaces with truck loading docks located along the landside and large roll-up doors located along the airside for passage of freight and cargo. Ground floor slabs and exterior foundation walls are poured concrete. Exterior walls are primarily metal panels over steel framing, with some masonry construction between the loading dock roll-up doors at the landside. Flat roofs are supported by steel columns, girders and trusses. Demolition of these buildings would yield approximately 35,000 cubic yards of construction debris. Table 6.9-3 provides a breakdown of construction debris by type of material. All demolition material will be recycled to the extent feasible.

Table 6.9-3
Total Estimated Building Demolition Materials

Material	Volume (cubic yards)
Subsoil	6,400
Concrete	9,400
Masonry	9,100
Metal	4,000
Miscellaneous Building Materials	5,700
Total	34,600

6.9.1.2 Centerfield Taxiway

The Centerfield Taxiway would be constructed between, and parallel to, Runways 4L/22R and 4R/22L. The taxiway would be 9,300 feet long (a length that incorporates some elements of the southwest taxiway system) and 100 feet wide, with two paved shoulders each 35 feet wide. A parallel service road, 24 feet wide, would be constructed along the eastern side of the Centerfield Taxiway.

Construction of the Centerfield Taxiway would entail the removal of existing vegetated soil. Approximately 11,000 cubic yards of existing soil will be excavated and removed from the site and replaced with coarser and better draining materials to form a suitable base. Approximately 41,000 cubic yards of unclassified excavate will be reused on site. The taxiway drainage system would be constructed and integrated into the existing airfield drainage system, and conduits for lighting and other taxiway instrumentation would be installed.

Construction of the Centerfield Taxiway would take place in two segments: Centerfield Taxiway-North, situated between Taxiway Romeo and Runway 15R/33L, and Centerfield Taxiway-South, between Runway 15R/33L and Taxiway Whiskey.

6.9.1.3 Southwest Corner Taxiway System Reconfiguration

Optimization of the present southwest corner taxiway system would entail the realignment of Taxiways Alpha, Echo, Kilo, Sierra and Whiskey, and integration of the Centerfield Taxiway. Approximately 9,000 cubic yards of existing bituminous pavement would be excavated and removed from the site. No existing soil would be removed from the site for construction of these improvements. Approximately 5,000 cubic yards of unclassified excavate will be reused on site.

Construction would consist of restriping existing pavement and the placement of new pavement and drainage in other areas. As noted in Section 6.5.1, approximately 6.1 acres of new vegetated area would be created upon completion of the taxiway optimization.

6.9.1.4 Taxiway Delta Extension

Taxiway Delta would be extended approximately 1,800 feet from the intersection with Taxiway Charlie southwest to Runway 4R/22L. Associated with this extension would be a slight realignment of the east end of Taxiway Echo to meet Taxiway Delta. Taxiway Delta would be 100 feet wide with two 35 foot paved shoulders. It is estimated that 32,000 cubic yards of soil material would be excavated and removed from the site during construction.

6.9.1.5 Taxiway November Realignment

The realignment of Taxiway November would consist of the reconstruction of approximately 1,800 linear feet of pavement, resulting in a taxiway 100 feet wide with two 35-foot wide paved shoulders. A majority of the area to be reconstructed is within the footprint of the existing taxiway, and construction would result in the excavation and

removal of approximately 43,000 cubic yards of fill and 11,500 cubic yards of existing bituminous pavement. Approximately 500 cubic yards of material will be reused on site.

6.9.2 Construction Sequence

A multi-year phased construction sequencing program has been designed to implement the construction elements of the Airside Project. The following policies guide the logic of the sequence:

1. Aircraft operational and safety needs take precedence over construction activity. Airport activity, runway configurations and so on dictate construction sequence, phasing and pace - not vice versa. Particularly where construction entails tying into an existing runway or taxiway, Massport Operations personnel would strictly control construction activity, in close coordination with FAA air traffic control personnel.
2. Construction of Runway 14/32 would occur first. This runway would significantly decrease congestion and delay at Logan, and would provide increased flexibility to FAA control tower personnel and Massport in devising taxiway routings during reconfiguration of the Southwest Taxiway System.
3. The Centerfield Taxiway would be built after Runway 14/32. This would permit Massport to address taxiway congestion and delay at Logan, thus eliminating some elements of noise and air quality emissions. Once in place, the Centerfield Taxiway would permit new taxi patterns bypassing the Southwest Corner to be established, thus isolating it and enabling construction activity to proceed in this location.
4. Taxiway improvements would then be addressed in an order which further promotes airfield safety and efficiency.

The work would be phased over five years, beginning in Year 1 with construction of Runway 14/32. A year-by-year summary of construction activity is illustrated in Table 6.9-4.

6.9.2.1 Construction Activities

A series of different construction contracts would be issued for each of the construction elements to be accomplished. The contractor(s) would be required to work an accelerated schedule during the first, second and third years in order to complete all of the proposed work. This would require the contractor to work extended periods of time (six or seven days a week, 12 to 16 hours a day) or the weekends at critical points in time. Construction work will occur primarily during the period of April through December with the exception of demolition work in the South Cargo area, which could occur during the months of January, February, and March if the weather permits.

Table 6.9-4
Construction Sequence and Schedule

	Year 1 2003 Quarter				Year 2 2004 Quarter				Year 3 2005 Quarter				Year 4 2006 Quarter				Year 5 2007 Quarter			
Construction Element	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Runway 14/32	■	■	■	■																
Centerfield Taxiway						■	■	■												
Southwest Taxiway System Reconfiguration										■	■	■								
Taxiway Delta Extension														■	■					
Taxiway November Realignment																		■	■	

The general nature of the construction activity is similar to that of a highway construction or rehabilitation project: excavation; placement and compaction of fill; installation of electrical conduits, drainage pipes and appurtenances; placement of asphalt; and installation of airport lighting and navigation systems.

Figure 6.9-1 illustrates the year-by-year location of construction activities.

Year 1

- Construction Element............ Runway 14/32
- Work Periods .... January 2003 - December 2003

Following the receipt of all environmental and procedural clearances, construction of Runway 14/32 will begin with the following preliminary items: relocation of the Runway 27 localizer (a navigation aid) and realignment of Taxiway Bravo; relocation of the tenants and operations in Building 60, and the subsequent demolition of Building 60 and 61.

Runway 14/32 is intended to be operational for visual flight rules (VFR) operations in late 2003 or early 2004, after FAA flight checks.

Most construction work for Runway 14/32 would occur during daylight hours. However, at critical locations, such as the realignment of Taxiway Bravo the intersection with Runway 4R, construction will take place at night and/or weekends during periods of decreased airfield activity.

Year 2

- Construction Element............Centerfield Taxiway
- Work Periods ....April 2004 - December 2004

Construction of the Centerfield Taxiway will include excavation and placement of subgrade material, paving, drainage, electrical work and tie-ins to the existing taxiway systems as well as final grading, loam and seeding.

During the construction of the Centerfield Taxiway, the contractor's forces will have to obtain ATC tower clearance to cross active taxiways and runways.

Year 3

- Construction Element.............Southwest Taxiway System Reconfiguration
- Work Periods..........................April 2005 - December 2005

Nighttime and weekend construction will be necessary for the reconfiguration of the Southwest Taxiway System, due to the operational sensitivity of these taxiways. Small sections of the overall project will be phased to minimize operational impacts to the airport. For construction to proceed, requests will be made to Massport Operations and FAA ATC personnel to pavement these sections to aircraft traffic on a nightly basis (11:00 PM to 6:00 AM) or during "weekend specials" (11:00 PM Friday to 2:00 PM Sunday). Construction will take place within these limited periods.

Year 4

- Construction Items..................Taxiway Delta Extension
- Work Periods..........................April 2006 - September 2006

A major portion of the Taxiway Delta extension will be constructed during the daytime period. Given the proximity of multiple runways and the required crossing of these runways by contractor vehicles and equipment, construction activity in this area is particularly sensitive. Tie-ins of Taxiway Delta to the existing runways and other taxiways will require nighttime or weekend construction to minimize operational impacts.

Year 5

- Construction Element.............November Taxiway Realignment
- Work Periods..........................April 2007 to September 2007

As construction here would impact operations on Runways 15R and 15L, as well as ground movements of aircraft taxiing to/from Runways 22R and 22L, the bulk of construction activity will take place at night and weekends. Operational impacts to taxiing aircraft will be mitigated by assigning this traffic to the Centerfield Taxiway.

Figure 6.9-1

Year-By-Year Construction Activities - Alternative 1

6.9.3 Airfield Operations

Construction must not interfere with the ability of the existing airfield to efficiently process the tens of thousands of passengers who pass through Logan Airport on a daily basis. In addition, the safety of these passengers and airline crews during construction must be assured. The construction process has been planned bearing these two issues in mind.

A multi-year construction sequence will be employed to minimize potential disruptions on the airfield and to the staffing levels and work loads of ATC personnel. A Construction Phasing Plan, with these same goals, will be developed in close coordination with Massport Operations, and FAA control tower personnel. Massport will take the appropriate steps to ensure that all functions of the airfield continue to be provided in an efficient and safe manner during the construction period, and that any impacts to users that do occur are kept to a minimal level.

While the implementation of the Preferred Alternative presents challenges to Massport, Massport addresses such challenges frequently, as construction on and maintenance of the airfield are continuous Massport activities.

The operational and safety procedures which Massport and FAA have developed and employed successfully on past projects will be applied to the improvements proposed in the Airside Project.

6.9.3.1 FAA Regulations Governing Construction on Airfields

All construction activity at Logan Airport is governed by FAA Advisory Circular (AC) 150/5370-2C, Operation Safety on Airports During Construction. This document prescribes both general and specific measures to be employed during construction, including the following provision:

> *"Each bidding document (construction plans and/or specifications) for airport development work or air navigation facility (NAVAID) installation involving aircraft operational areas should incorporate a section on safety on airports during the construction activity. The section, as a minimum, should contain the appropriate provisions outlined in appendix 1 to this AC. (Para. 5b)"*

There is one guiding precept to the FAA regulations: aircraft operational and safety needs take precedence over construction. In practice, this translates to the following: construction activity adjusts both in location and in timing to airport runway configurations and taxiway patterns. In other words, runway configurations will not be altered to accommodate construction, except in instances where a number of runway configurations are available to the FAA personnel in ATC, and after coordination with FAA personnel as described below.

Massport follows FAA AC 150/5370-2C beginning with preliminary design and continuing throughout the construction period. A detailed safety section is presently included in all Massport bidding documents covering construction activity on the airfield, and such a section will be included in all construction bid documents (and subsequent construction contracts) for work on this project.

6.9.3.2 Airfield Operational Safety during Airside Project Construction

Preliminary Design

To minimize impacts on airfield operations, careful coordination would begin in the early stages of design to develop a coordinated Construction Phasing Plan for daily implementation. During the development of the Construction Phasing Plan, representatives from Logan Airport Operations, and the FAA will be consulted.

The Construction Phasing Plan would identify the following:

- a preliminary phasing plan, indicating the sequence of construction;
- construction areas, with nearby runways and taxiways and clearance requirements clearly demarked and highlighted;
- specific start and stop dates;
- hours and days of the week when the contractor is allowed to work within certain operationally sensitive areas of the airport;
- protocol and procedures for notifying FAA air traffic control personnel when an existing FAA NAVAID would be affected; and,
- preliminary construction traffic plan, indicating procedures and means of access/egress to/from the airfield and means of circulating within the airfield.

Construction of Runway 14/32 will entail the relocation of the Runway 27 localizer, a key element in the instrument landing system by the FAA. The localizer signal is used to establish and maintain an aircraft's horizontal position until the pilot makes visual contact with the runway. The Construction Phasing Plan will detail protocols and procedures to be followed when relocating and reinstalling this device. NAVAID closures will be coordinated with FAA air traffic control personnel, FAA safety personnel and Logan Airport Operations personnel. Notices to Airmen (NOTAMS) will be issued as appropriate. As necessary, FAA will broadcast information over the Logan Automatic Terminal Information Service (ATIS), describing areas of construction, NAVAID status, and closures or cautions on the use of runways and taxiways. As FAA ATC personnel update these radio broadcasts hourly, they provide pilots with a constant up-to-date status of construction activity on the airfield.

Construction

Once construction is underway, the contractor's performance for the previous week will be evaluated and discussions relevant to the work proposed for the following week will be included in the weekly job meetings and operations meetings held at Logan. Typically, these meetings are attended by representatives from Massport Logan Airport Operations, Capital Programs, FAA and contractors.

During these meetings, preliminary runway/taxiway closures or cautions would be discussed with Logan Airport Operations and FAA ATC personnel. As part of the requested closures or cautions, any interim taxi routing would also be discussed. Construction contingency plans would be prepared in case the contractor would not be allowed to work in the preferred location. All parties would agree with the proposed Construction Phasing Plan, which would then form the basis of the following week's construction activities.

The day-to-day decisions on whether a particular runway/taxiway would be available for construction work would be made by Logan Airport Operations and FAA ATC personnel. The following protocol would be utilized:

- Massport contacts FAA ATC personnel and requests applicable portion of the runway/taxiway (in accordance with the Construction Phasing Plan);
- FAA reviews wind and weather conditions, projected activity, and other factors and grants or denies request;
- If granted, Massport implements this decision and notifies the contractor accordingly; and,
- If denied, Massport implements this decision and notifies the contractor that work in another area of the airport, in accordance with the contingency plan established previously, would be required.
- Consistent with current Massport protocol, the public would be notified of changes in runway use during construction.

Under very poor weather conditions, Massport has the authority to deny or restrict the contractor's access to the entire airfield in which case, no work is done on the airfield.

Construction Vehicle Traffic Plan

The movement of construction equipment and trucks to and from the airfield construction site(s) is of particular concern to FAA and Massport. FAA notes that aircraft (and air passenger) safety is endangered by four principle causes: increased vehicle traffic volume, non-standard vehicle traffic patterns, vehicles without radio communications and marking, and operators untrained in the airport's safety procedures. Hence, according to FAA AC 150/5370-2C:

> *"...airport management must develop and coordinate a construction vehicle traffic plan with airport users, air traffic control and the appropriate construction engineers and contractors. This plan, when signed for all participants becomes a part of the contract." (AC 150/5370-2C, Appendix 1, para. 8)*

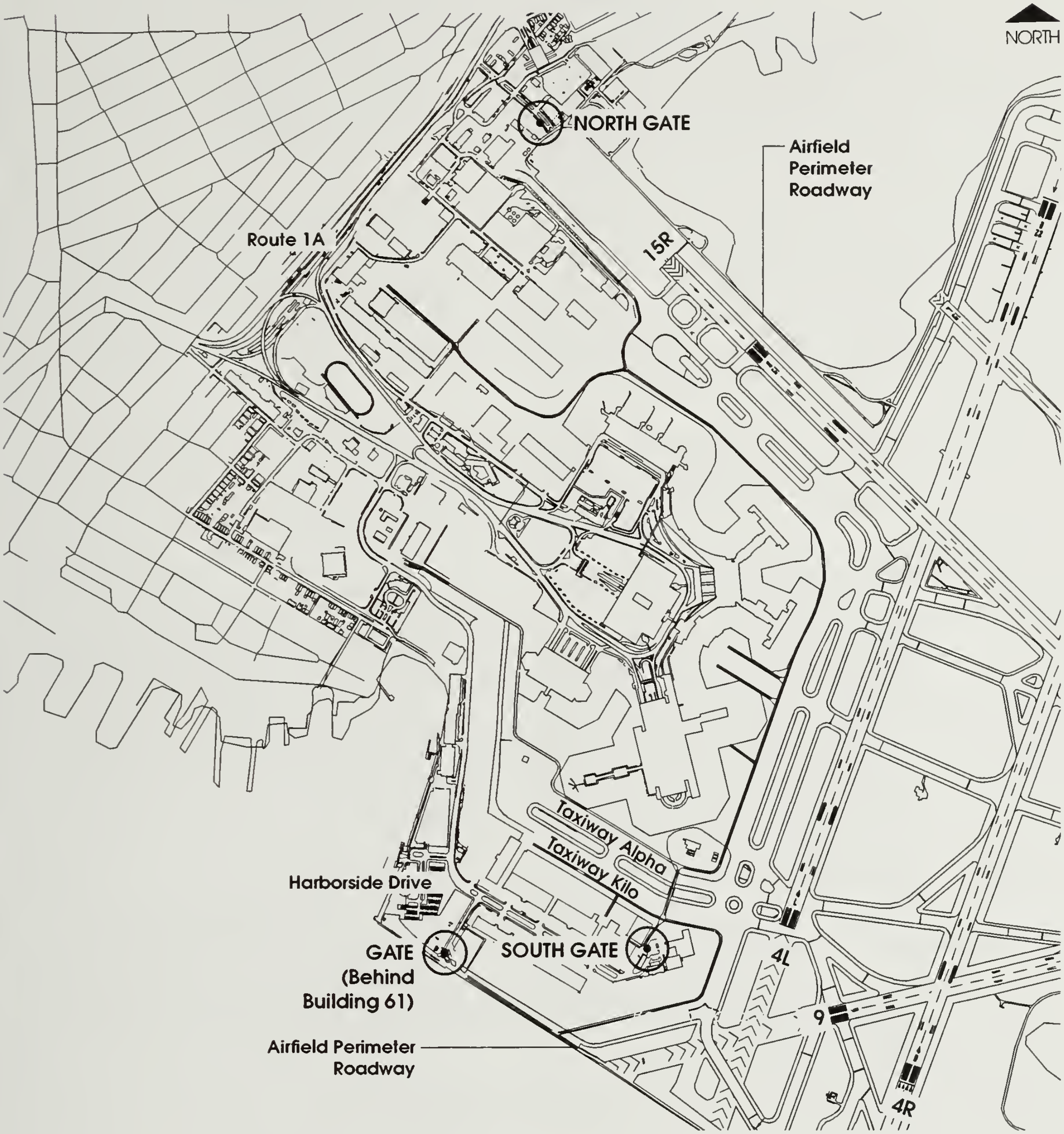
Such a vehicle traffic plan will be included in the Construction Phasing Plan developed by Massport for all construction projects on the airfield.

For both safety and security reasons, access to the airfield proper is available only through manned gates. For work on the south side of the airport (i.e., the southwest taxiway system, Taxiway Delta) the contractor would likely enter the airport through the existing South Gate located to the west of the airfield lighting vault (see Figure 6.9-2 for access points and circulation routes). From this point, the contractor would be escorted by licensed drivers approved by Logan Airport Operations in clearly marked contractor vehicles to the construction site using the airfield perimeter roadway. At critical junctures, such as the crossing of a runway or taxiway, Contractor licensed personnel request and receive permission from the FAA ATC prior to crossing.

For work on Runway 14/32, the contractor would typically use an existing construction-access gate located near the U.S. Postal Service facility (Building 61) on the south side of the airport. This access point provides a more direct access to the airfield perimeter roadway and has greater width to facilitate the turning of large trucks.

For all other construction projects, e.g., Taxiway November and the Centerfield Taxiway, access to the airfield would likely be through the North Gate. As per Massport's operating procedures, the contractor will be escorted to/from the construction site by trained personnel approved by Logan Airport Operations.

Contractor access locations will be verified during the development of the Construction Phasing Plan for the Airside Project improvements.



massport

Figure 6.9-2
Airside Access Points

6.9.4 Impacts on the Surrounding Communities

For impacts other than those which might directly affect operations on the airfield, construction period impact assessments have been conducted with regard to existing ground transportation, air quality, noise and nighttime construction lighting. Each of these subject areas is discussed in the following sections of this chapter. Accompanying each of these assessments is a discussion of the mitigation measures that will be employed to minimize the impacts.

A variety of measures of activity have been developed in order to identify and mitigate the potential impacts of constructing the Preferred Alternative. These activity estimates are based on anticipated construction methods and projected construction schedules. Truck trips, the types of heavy construction equipment on the site, and the noise effects of similar construction projects are estimated. These data constitute key inputs to the construction impact analyses.

Average daily round-trip truck trip information was used in the assessment of ground transportation impacts and, in combination with estimates of heavy equipment use, in the noise impact assessment.

6.9.4.1 Ground Transportation

Impacts to ground transportation at Logan Airport during construction of the proposed airport improvements are not expected to result from the presence of construction-related vehicles (trucks or other heavy equipment) on the airport's roadway system. There will be no need to institute temporary detours for the main airport roadway as a result of the construction process. Roadway detours are only anticipated for the Perimeter Roadway on the airfield during construction of Runway 14/32, and a section of Harborside Drive in the South Cargo area during demolition of Cargo Buildings 60 and 61.

Construction-related Vehicles

The number of truck round trips required throughout construction of the Preferred Alternative is derived from the estimated quantities of construction materials to be brought to or removed from the site; bulk materials and equipment to be delivered to the site; truck capacity; quantity of excavate and building demolition debris to be removed; and production rate per workday.

The types of trucks included in the analysis are the following:

- Ten-wheel, tri-axle dump trucks (capacity of 10 to 15 cubic yards);
- Flat bed trailers to transport heavy construction equipment; and,
- Concrete trucks (capacity of 9 to 12 cubic yards).

The average daily number of truck round trips required to support the construction are depicted (by calendar quarter) in Table 6.9-5.

Table 6.9-5
Average Daily Truck Round Trips Per Quarter

Year/Quarter	Average Daily Round Trips	Daytime Trips	Nighttime Trips
2003 / 1st Quarter	61	61	0
2003 / 2nd Quarter	61	43	18
2003 / 3rd Quarter	61	61	0
2003 / 4th Quarter	61	61	0
2004 / 1st Quarter	--	--	--
2004 / 2nd Quarter	92	92	0
2004 / 3rd Quarter	92	46	46
2004 / 4th Quarter	92	92	0
2005 / 1st Quarter	--	--	--
2005 / 2nd Quarter	18	0	18
2005 / 3rd Quarter	18	5	13
2005/ 4th Quarter	18	5	13
2006 / 1st Quarter	--	--	--
2006 / 2nd Quarter	47	47	0
2006 / 3rd Quarter	47	38	9
2006 / 4th Quarter	--	--	--
2007 / 1st Quarter	--	--	--
2007 / 2nd Quarter	56	28	28
2007 / 3rd Quarter	56	28	28
2007 / 4th Quarter	--	--	--

These truck volumes should be viewed in the proper perspective: trucks will be prohibited from using local streets and thus will not impact local residential streets in communities surrounding the airport. Construction vehicles will be required to use state highways and/or main airport roadways, which are designated, truck routes. Vehicles with origins/destinations south of Boston would access the airport via the Ted Williams Tunnel and the Haul Road, or other designated haul routes, with access to I-93. Vehicles traveling to/from the north would use Route 1A. (See Figure 6.9-3.)

Construction traffic from the improvements associated with the Preferred Alternative would not add significantly to the existing volume of traffic using these roads. Peak airside truck traffic

is estimated to be approximately 184 truck trips per day.[40] This is reduced significantly from 648 peak truck trips presented in the Airside Project Draft EIS/EIR as a result of the reduction of soil material to be removed off-site. Average weekday traffic on the major highways accessing Logan Airport in 1998 was approximately 113,300 vehicles.[41] Construction vehicles associated with the Airside Project represent less than 0.2 percent of the total traffic volume and will not have a significant impact on the regional highway system.

Traffic Operations

During the multi-year construction of the Airside Project improvements, Massport will seek to maintain the full operation of Harborside Drive at all times. As necessary, temporary roadways will be constructed prior to the disruption or closure of existing airfield roadways. (Access to airfield roadways is restricted to authorized vehicles only.) Police details will be employed at appropriate locations on the airport to manage traffic and ensure public safety.

6.9.4.2 Air Quality

Construction-related activities can result in short-term impacts on ambient air quality. These potential impacts include increased emissions from motor vehicles on the airport roadways, direct emissions from construction equipment, and fugitive dust emissions. The latter can occur during ground excavation, movement of equipment at the site, and transport of material to and from the site. Fugitive dust during periods of intense activity can present a problem, particularly in windy or dry weather conditions, although the problem is localized.

During the construction process, a regular program of street sweeping will minimize dust from movements of construction vehicles on airport roads. Fugitive dust will also be controlled with water spray as needed during demolition and construction; no chemical soil stabilizers will be used. To the extent it is safe, practicable, and feasible within the airfield environment, fencing will be used around the perimeter of demolition and construction areas to shield the public from fugitive dust and to help contain fugitive dust within the construction area. All trucks hauling demolished and excavated materials from the site will be covered and truck wheel wells will be washed before leaving the site. Because of these mitigation measures and the distance from the construction site to the nearest residential neighborhood, it is projected that fugitive dust from construction of the Airside Project improvements will not impact the surrounding communities.

40 92 round trips equal 184 total trips.
41 *Logan Airport 1998 Annual Update*, October 1999.

massport

Figure 6.9-3

Proposed Construction Traffic Routes

Airborne particulate matter such as dust is measured by monitoring ambient PM-10 (particulate matter less than 10 microns in diameter). The closest PM-10 monitoring station, and the one most representative of the project site, is at 340 Bremen Street, East Boston. Published data from DEP (for the year 1998) indicate that the second highest maximum 24-hour PM-10 level measured at this monitoring station was 49 micrograms per cubic meter ($\mu g/m^3$). The 24-hour NAAQS for PM-10 is 150 $\mu g/m^3$, which is a level set to protect public health and welfare. It is expected that total levels of particulate matter will remain in compliance with the NAAQS during construction, since the existing worst-case PM-10 concentration is only 33 percent of the health standard. This will be ensured through the mitigation measures discussed above.

Emissions from all construction equipment, including those listed below in Section 6.9.4.4, were quantified by year using appropriate emissions factors from the EPA models. MOBILE5a_H and PART5 were used with inputs provided by MADEP to determine emission factors for diesel and gasoline trucks at a speed of 15 miles per hour (e.g., asphalt tanker trucks and stake trucks), while NONROAD (draft) was used to determine non-road emissions (e.g., demolition hammers, backhoes, graders, etc.). The emissions factors in this model incorporate national averages for equipment loading factors and engine horsepower. The activity levels (hours per year) and emissions associated with each equipment type are contained in Appendix J.

Paving activities associated with the airfield projects have associated emissions of VOCs, which are components of asphalt. These emissions have been quantified and are included in the summary of construction-related air emissions in Table 6.9-6.

Table 6.9-6
Construction-Related Air Emissions in Tons per Year (tpy)

Year	VOCs	NOx	CO	PM
2002	19.98	34.34	72.52	2.56
2003	29.40	25.53	50.58	1.64
2004	30.39	9.82	35.81	0.86
2005	7.11	5.79	20.88	0.41
2006	7.83	7.95	20.98	0.61

Note: *De minimis* values for VOCs and NOx are each 50 tons per year (tpy); 100 tpy for CO. No *de minimis* levels apply for PM because the area attains the standards for this pollutant.

As shown, emissions of VOCs, NOx, and CO are all below the *de minimis* rates that would trigger a Clean Air Act conformity determination. Furthermore, Massport is committed to implementing the Clean Air Construction Initiative in cooperation with MADEP and Northeast States for Coordinated Air Use Management (NESCAUM). This program is currently in place for the Central Artery/Tunnel, where conversion of

25 percent (70 pieces) of construction equipment will reduce emissions of hydrocarbons (or VOCs), CO, and particulate matter (PM). NESCAUM studies show that use of an oxidation catalyst, which may also be used in conjunction with a fuel-borne catalyst, can reduce, on average, VOCs by 42 percent, CO by 31 percent, and PM by 23 percent. Use of a particulate filter can reduce PM by 81-96 percent and, when the filter is coated with an oxidation catalyst, CO and VOCs can be reduced by 66 percent. None of the tested technologies has had an effect on NOx emissions. The reductions attributable to this initiative have not been incorporated into the results in Table 6.9-6 above, and they would have the effect of further reducing emissions below *de minimis* thresholds.

6.9.4.3 Noise

The assessment of construction noise impacts was based on the following primary inputs:

- The quantity of heavy construction equipment anticipated to be used during construction;
- The number of truck trips to or from each construction area;
- The location of the proposed construction on the airfield; and,
- The amount of night time and day time construction.

The number of truck trips is as developed in Section 6.9.4.1. The other levels of activity are derived as described below.

6.9.4.4 Heavy Construction Equipment

Estimates of the number of pieces of heavy construction equipment in use at the site were based on such factors as the productivity rate per workday and the duration of construction. The types of equipment expected to be utilized are listed below and are described in greater detail in Appendix J. The average daily number of pieces of equipment scheduled to be used for the calendar quarter and daytime and nighttime construction also is provided in Appendix J.

- Dump trucks
- Mobile cranes
- Graders
- Concrete trucks
- Front end loaders
- Pavement milling machines
- Liquid asphalt tanker truck
- Compressors
- Pavements saws
- Tractor-trailers (materials)
- Backhoes
- Demolition hammers
- Back hoes with hoe-rams
- Generator
- Compactors
- Excavators
- Sweepers
- Bulldozers
- Paving machine

6.9.4.5 Construction Period Noise Analysis

Analysis Summary

The construction period noise analysis evaluates the potential noise impact from the Airside Project on the closest noise-sensitive areas to the construction zone and follows the methodology used previously for the West Garage and International Gateway environmental analysis. Potential construction noise impacts were evaluated at the following receptor locations:

- Receptor 6 Somerset and Johnson, Winthrop
- Receptor 7 Loring Road near Court, Winthrop
- Receptor 10 Bayswater/Shawsheen, East Boston
- Receptor 12 East Boston Yacht Club, East Boston
- Receptor C[42] Coleridge Street Residence, East Boston
- Receptor A Sumner near Lamson, East Boston
- Receptor 14 Jeffries Point Yacht Club, East Boston
- Receptor E Farragut Road at Second, South Boston

Predictions of average daily equivalent (Leq) and day-night equivalent (DNL) noise levels were made for each receptor.

Noise impact may result from annoyance and activity interference due to the operation of a variety of heavy construction equipment and trucks used to transport construction materials and equipment to and from the site. A number of mitigation measures are proposed in the construction noise mitigation discussion below.

Because environmental noise fluctuates from moment to moment, it is common practice to condense all this information into a single number, called the "equivalent" sound level (Leq). Leq can be thought of as the steady sound level that represents the same sound energy as the varying sound levels over a specified time period; it accounts for all the noise that occurs during this period. Many surveys show that Leq properly predicts annoyance, and thus this metric is commonly used for the assessment of cumulative noise impact. For the purposes of this study, Leq is evaluated over an average daily 8-hour construction shift during each quarterly construction period. The analysis of Leq was conducted for both the daytime and nighttime construction periods. Criteria for evaluating construction noise impact in terms of Leq are described below.

The day-night equivalent level (DNL) measures noise over a 24-hour period. It is calculated in the same manner as a 24-hour Leq, except that noise that occurs in the nighttime (defined as 10:00 PM to 7:00 AM) is penalized by 10 dB to account for peoples' increased sensitivity to nighttime noise.

42 Same as "Receptor E" in International Gateway, EIR/EA, October 15, 1996.

Potential construction noise impact associated with the Airside Project was assessed in terms of average daytime equivalent sound levels, average nighttime equivalent sound levels, and day-night equivalent level, using criteria based on the existing noise environment as well as applicable standards. A summary of the analysis method is provided below, including descriptions of the noise measures, criteria, and modeling methods used. Detailed input and output data for the construction noise projections are provided in Appendix J.

The results of the construction period noise analysis indicate that, under worst-case conditions, no perceptible construction noise impact during the daytime or nighttime construction period is expected within the community as a result of the Airside Project.

Analysis Conditions

The potential noise impacts associated with the Airside Project construction activities were evaluated on a quarterly basis over the proposed five-year construction period (2002 to 2006). During each quarterly period, potential noise impacts were evaluated on a worst-case basis, based on the projected average daily heavy construction equipment usage and truck operations and whether construction occurred during the day time or night time. For the purpose of impact assessment, ambient noise conditions were based on existing information from noise monitoring stations maintained by Massport.

For noise analysis purposes, all construction activities related to the Airside Project were divided into two construction locations: those on the north side of the airfield which would use the North Gate for construction access, and those on the south side which would use the South Gate or Construction Gate for access (see Figure 6.9-2). The dividing line between the two construction areas was defined as Runway 15L/33R.

A cumulative assessment of construction noise for all significant construction at Logan Airport during the 2002 to 2006 timeframe of Airside Project improvements construction is presented in Chapter 7.

Noise Impact Criteria

Criteria for the assessment of construction impacts from the Airside Project are based on consideration of applicable federal standards. Although there are no specific federal criteria for construction noise impact assessment, most federal agencies (including the Environmental Protection Agency (EPA), Housing and Urban Development (HUD), Federal Aviation Administration (FAA), and Federal Highway Administration (FHWA)) recommend the use of Leq-based noise descriptors for general assessments of noise impact. The relevant provisions of federal standards that apply to construction noise are summarized below.

The 1990 CA/T *Final Supplemental EIS/R* and *Supplemental Final Section 4(f) Evaluation* evaluated the noise impacts of the CA/T Project construction based on FHWA standards. The following excerpt from that document provides a discussion of noise impact criteria:

> *"FHWA recognizes that an adverse, or substantial, noise impact occurs when existing noise levels are exceeded by more than 15 dBA. Increases of less than 15 dBA over existing levels may be classified into one of three subjective impact categories, depending on the extent of the increases. Less than a 5 dBA increase would be categorized as 'no impact.' A 5 to 9 dBA increase would be considered a 'minor impact,' while a 10 to 15 dBA increase over existing levels would be a 'moderate impact.' "*

For the Airside Project and concurrent construction projects at Logan, noise impact is assessed on a relative basis, as an increase over existing ambient noise level at each receptor, in a manner consistent with the CA/T Project.

These descriptors thereby allow a meaningful comparison of project noise and ambient noise, and provide a means to evaluate cumulative noise impact from concurrent projects. Furthermore, the results of attitudinal surveys of noise impact have shown that Leq-based descriptors correlate with annoyance better than any other descriptors. For these reasons, the assessment of noise impact from constructing the Airside Project is based on Leq according to the federal standards described above. Projections of day-night equivalent noise levels are provided as additional information to help evaluate the effect of nighttime construction.

Off-Airport Noise During Construction

Quarterly construction noise projections are provided in Tables 6.9-7, 6.9-8, and 6.9-9 for receptor locations 6, 7, 10, 12, 14, A, C, and E. These tables compare the projected average daily DNL and Leq for day and night during each quarterly construction period for the Airside Project to the existing ambient noise. Noise impact is assessed based on the projected increases above the ambient noise level. These increases represent worst-case conditions that are expected to occur intermittently, based on wind direction, in any quarter.

The results of the construction period noise analysis indicate that during construction, the average daily DNL at the receptor locations ranges from 0.5 dB to 3.0 dB over ambient noise levels. The Leq during construction ranges from 0.4 dB to 2.0 dB over ambient noise levels during the daytime construction period and 0.5 dB to 3.9 dB over ambient noise levels during the nighttime construction period. All increases in noise associated with construction of the Airside Project are less than 5 dB, and therefore are considered to have "no impact" according to FHWA standards.

The noise increases projected as a result of Airside Project construction range from 0.4 dBA to 3.9 dBA with respect to the ambient level. Based on the FHWA criteria described above, no impact is predicted at any of these residential sites.

Table 6.9-7
Airside Construction Noise DNL in Decibels

Receptor	Activity	2003				2004				2005				2006				2007			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
6	Construction	47.8	58.5	48.8	47.4	0.0	57.0	63.9	54.3	0.0	56.8	56.9	56.9	0.0	53.4	59.3	0.0	0.0	60.8	61.2	0.0
	Ambient	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
	Total	65.6	66.3	65.6	65.6	65.5	66.1	67.8	65.8	65.5	66.0	66.1	66.1	65.5	65.8	66.4	65.5	65.5	66.8	66.9	65.5
7	Construction	49.1	56.1	50.2	48.7	0.0	59.1	66.0	56.4	0.0	56.0	56.2	56.2	0.0	53.4	56.7	0.0	0.0	61.9	62.3	0.0
	Ambient	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1
	Total	75.1	75.2	75.1	75.1	75.1	75.2	75.6	75.2	75.1	75.2	75.2	75.2	75.1	75.1	75.2	75.1	75.1	75.3	75.3	75.1
10	Construction	47.5	54.4	48.6	47.1	0.0	56.0	63.2	53.4	0.0	54.1	54.3	54.3	0.0	48.8	54.6	0.0	0.0	60.1	60.5	0.0
	Ambient	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1
	Total	65.2	65.5	65.2	65.2	65.1	65.6	67.3	65.4	65.1	65.4	65.4	65.4	65.1	65.2	65.5	65.1	65.1	66.3	66.4	65.1
12	Construction	48.9	55.8	49.9	48.5	0.0	57.1	64.0	54.5	0.0	55.7	55.9	55.9	0.0	49.5	55.3	0.0	0.0	63.2	63.6	0.0
	Ambient	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
	Total	70.0	70.2	70.0	70.0	70.0	70.2	71.0	70.1	70.0	70.2	70.2	70.2	70.0	70.0	70.1	70.0	70.0	70.8	70.9	70.0
C	Construction	49.0	56.0	50.1	48.7	0.0	56.0	62.9	53.5	0.0	56.1	56.3	56.3	0.0	49.3	55.1	0.0	0.0	62.9	63.3	0.0
	Ambient	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
	Total	69.6	69.8	69.6	69.6	69.6	69.8	70.4	69.7	69.6	69.8	69.8	69.8	69.6	69.6	69.8	69.6	69.6	70.4	70.5	69.6
A	Construction	53.6	60.5	54.7	53.2	0.0	50.8	57.5	48.2	0.0	55.6	55.8	55.8	0.0	45.4	50.8	0.0	0.0	53.8	54.2	0.0
	Ambient	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2
	Total	61.9	63.9	62.1	61.8	61.2	61.6	62.8	61.4	61.2	62.3	62.3	62.3	61.2	61.3	61.6	61.2	61.2	61.9	62.0	61.2
14	Construction	55.5	62.5	56.6	55.1	0.0	50.8	54.5	48.3	0.0	53.4	53.6	53.6	0.0	43.0	47.9	0.0	0.0	52.6	53.0	0.0
	Ambient	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5
	Total	63.3	65.5	63.5	63.2	62.5	62.8	63.1	62.7	62.5	63.0	63.0	63.0	62.5	62.5	62.6	62.5	62.5	62.9	63.0	62.5
E	Construction	52.4	53.8	53.5	52.0	0.0	49.1	55.9	46.5	0.0	55.1	55.3	55.3	0.0	47.4	53.1	0.0	0.0	51.3	51.7	0.0
	Ambient	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3
	Total	61.8	62.0	62.0	61.8	61.3	61.6	62.4	61.4	61.3	62.2	62.3	62.3	61.3	61.5	61.9	61.3	61.3	61.7	61.8	61.3

Table 6.9-8
Airside Construction Noise Leq Day in Decibels

Receptor		2003				2004				2005				2006				2007			
NMS#	Activity	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
6	Construction	50.1	57.0	51.2	49.7	0.0	59.3	60.1	56.7	0.0	0.0	47.3	47.3	0.0	55.8	52.5	0.0	0.0	53.4	53.2	0.0
	Ambient	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
	Total	64.5	65.1	64.5	64.5	64.3	65.5	65.7	65.0	64.3	64.3	64.4	64.4	64.3	64.9	64.6	64.3	64.3	64.7	64.7	64.3
7	Construction	51.4	51.0	52.5	51.0	0.0	61.4	62.2	58.8	0.0	0.0	46.5	46.5	0.0	55.8	49.9	0.0	0.0	54.5	54.2	0.0
	Ambient	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3
	Total	72.3	72.3	72.3	72.3	72.3	72.6	72.7	72.5	72.3	72.3	72.3	72.3	72.3	72.4	72.3	72.3	72.3	72.3	72.3	72.3
10	Construction	49.8	49.4	50.9	49.4	0.0	58.3	59.0	55.8	0.0	0.0	44.7	44.7	0.0	51.2	47.9	0.0	0.0	52.8	52.5	0.0
	Ambient	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7
	Total	63.9	63.8	63.9	63.8	63.7	64.8	64.9	64.3	63.7	63.7	63.7	63.7	63.7	63.9	63.8	63.7	63.7	64.0	64.0	63.7
12	Construction	51.2	50.8	52.3	50.8	0.0	59.4	60.2	56.9	0.0	0.0	46.3	46.3	0.0	51.8	48.6	0.0	0.0	55.9	55.6	0.0
	Ambient	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6
	Total	67.7	67.7	67.7	67.7	67.6	68.2	68.3	67.9	67.6	67.6	67.6	67.6	67.6	67.7	67.6	67.6	67.6	67.6	67.6	67.6
C	Construction	51.4	51.0	52.5	51.0	0.0	58.4	59.0	55.8	0.0	0.0	46.7	46.7	0.0	51.7	48.4	0.0	0.0	55.6	55.3	0.0
	Ambient	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5
	Total	66.7	66.6	66.7	66.6	66.5	67.1	67.2	66.9	66.5	66.5	66.6	66.6	66.5	66.7	66.6	66.5	66.5	66.9	66.8	66.5
A	Construction	55.9	55.5	57.0	55.5	0.0	53.1	53.8	50.6	0.0	0.0	46.2	46.2	0.0	47.7	44.9	0.0	0.0	46.6	46.4	0.0
	Ambient	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2
	Total	60.9	60.7	61.2	60.7	59.2	60.1	60.3	59.7	59.2	59.2	59.4	59.4	59.2	59.5	59.3	59.2	59.2	59.4	59.4	59.2
14	Construction	57.9	57.4	58.9	57.5	0.0	53.2	53.8	50.6	0.0	0.0	44.0	44.0	0.0	43.2	43.1	0.0	0.0	45.5	45.2	0.0
	Ambient	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2
	Total	62.9	62.7	63.2	62.7	61.2	61.8	61.9	61.6	61.2	61.2	61.3	61.3	61.2	61.3	61.3	61.2	61.2	61.3	61.3	61.2
E	Construction	54.7	54.3	55.8	54.3	0.0	51.5	52.2	48.9	0.0	0.0	45.7	45.7	0.0	49.5	46.5	0.0	0.0	44.1	43.8	0.0
	Ambient	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
	Total	61.0	60.9	61.3	60.9	59.9	60.5	60.6	60.2	59.9	59.9	60.0	60.0	59.9	60.3	60.1	59.9	59.9	60.0	60.0	59.9

Table 6.9-9
Airside Construction Noise Leq Night in Decibels

Receptor		2003				2004				2005				2006				2007			
NMS#	Activity	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
6	Construction	0.0	51.0	0.0	0.0	0.0	0.0	57.4	0.0	0.0	51.5	51.4	51.4	0.0	0.0	53.5	0.0	0.0	55.1	55.6	0.0
	Ambient	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7
	Total	57.7	58.5	57.7	57.7	57.7	57.7	60.6	57.7	57.7	58.6	58.6	58.6	57.7	57.7	59.1	57.7	57.7	59.6	59.8	57.7
7	Construction	0.0	50.0	0.0	0.0	0.0	0.0	59.5	0.0	0.0	50.8	50.7	50.7	0.0	0.0	50.9	0.0	0.0	56.1	56.6	0.0
	Ambient	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3
	Total	68.3	68.4	68.3	68.3	68.3	68.3	68.8	68.3	68.3	68.4	68.4	68.4	68.3	68.3	68.4	68.3	68.3	68.6	68.6	68.3
10	Construction	0.0	48.3	0.0	0.0	0.0	0.0	56.9	0.0	0.0	48.9	48.8	48.8	0.0	0.0	48.8	0.0	0.0	54.4	54.9	0.0
	Ambient	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5
	Total	57.5	58.0	57.5	57.5	57.5	57.5	60.2	57.5	57.5	58.1	58.1	58.1	57.5	57.5	58.0	57.5	57.5	59.2	59.4	57.5
12	Construction	0.0	49.7	0.0	0.0	0.0	0.0	57.5	0.0	0.0	50.5	50.4	50.4	0.0	0.0	49.4	0.0	0.0	57.5	58.0	0.0
	Ambient	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
	Total	63.0	63.2	63.0	63.0	63.0	63.0	64.1	63.0	63.0	63.2	63.2	63.2	63.0	63.0	63.2	63.0	63.0	64.1	64.2	63.0
C	Construction	0.0	49.9	0.0	0.0	0.0	0.0	56.4	0.0	0.0	50.9	50.8	50.8	0.0	0.0	49.3	0.0	0.0	57.2	57.7	0.0
	Ambient	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
	Total	62.9	63.1	62.9	62.9	62.9	62.9	63.8	62.9	62.9	63.2	63.2	63.2	62.9	62.9	63.1	62.9	62.9	63.9	64.0	62.9
A	Construction	0.0	54.4	0.0	0.0	0.0	0.0	51.1	0.0	0.0	50.4	50.2	50.2	0.0	0.0	44.9	0.0	0.0	48.0	48.5	0.0
	Ambient	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0
	Total	54.0	57.2	54.0	54.0	54.0	54.0	55.8	54.0	54.0	55.6	55.5	55.5	54.0	54.0	54.5	54.0	54.0	55.0	55.1	54.0
14	Construction	0.0	56.4	0.0	0.0	0.0	0.0	46.3	0.0	0.0	48.2	48.0	48.0	0.0	0.0	41.7	0.0	0.0	46.8	47.3	0.0
	Ambient	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8
	Total	54.8	58.7	54.8	54.8	54.8	54.8	55.4	54.8	54.8	55.7	55.6	55.6	54.8	54.8	55.0	54.8	54.8	55.4	55.5	54.8
E	Construction	0.0	44.0	0.0	0.0	0.0	0.0	49.5	0.0	0.0	49.9	49.8	49.8	0.0	0.0	47.2	0.0	0.0	45.5	46.0	0.0
	Ambient	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
	Total	53.7	54.1	53.7	53.7	53.7	53.7	55.1	53.7	53.7	55.2	55.2	55.2	53.7	53.7	54.6	53.7	53.7	54.3	54.4	53.7

On-Airport Noise Assessment

The quantitative noise analyses presented above address potential impact to community areas outside the airport. Given the ambient noise level at the airport and the fact that construction will occur on the airfield and away from the terminals, it is not likely that construction noise would be audible to airport patrons. Because the terminal buildings are designed to reduce noise from outside sources (in particular from aircraft) construction noise should not be intrusive to patrons inside the terminals.

6.9.4.6 Nighttime Construction Lighting

Area lighting will be required for nighttime construction. Contractors would be required to aim the lights on the construction site and away from the neighborhoods, pilots and control tower.

The typical lighting device is a light station mounted on a trailer with a generator. The generator has a muffler to minimize the engine noise. Once at the construction site, the light station is extended above the trailer to an overall height of approximately 10 to 15 feet, aimed toward the construction area and turned on. At the end of the nighttime period, the light station is lowered onto the trailer and the generator stopped. The entire unit is then transported to the contractor's equipment storage area.

The number of light stations will depend on the size of the work site. A maximum of eight light stations would normally be used during paving operations.

6.9.5 Construction Mitigation

An extensive array of construction period mitigation measures is proposed for the proposed Airside Project improvements. Measures specifically addressing safety, traffic, air and water quality, light and noise will be written into the contract documents and specifications governing the contractors and subcontractors constructing the improvements. As in Logan Airport Modernization and other major construction projects at the airport, Massport will employ a team of on-site resident engineers and inspectors to monitor the contractors' compliance with these mitigation measures.

Safety is of paramount concern since major construction will be occurring in proximity to operating runways and taxiways. All construction activity will be governed by the requirements of FAA AC 150/5370-2C Operational Safety on Airports During Construction.

Construction mitigation measures in a number of categories are described below.

6.9.5.1 Traffic Operations

During the construction of the proposed Airside Project improvements, Massport will seek to maintain the full operation of the airport roadway system at all times. If and as

necessary, temporary roadways will be constructed prior to the disruption or closure of the South Cargo area section of Harborside Drive as well as the existing airfield roadways, with current lane capacity being maintained to the maximum extent feasible.

Specific traffic mitigation measures to be employed will include, but not necessarily be limited to, the following:

- Construction vehicles will be required to use State highways or Logan Airport roadways, including the Ted Williams Tunnel, except for access to the North Gate or when seeking access to local businesses. A clause to this effect will be inserted in all construction contracts relating to the Airside Project improvements.
- Truck routes for Logan Airport projects are established which minimize impacts on the local communities. Construction vehicles would be restricted from using Neptune Road (except to access the North Gate), Maverick Street, and Porter Street in East Boston. Designated truck routes will be specified in all construction contracts.
- No construction employee parking spaces will be permitted on the construction site nor will provisions be made for them elsewhere on-airport with the exception of a small number of spaces for supervisory personnel. It is expected that construction workers will access the airport via public transportation or via shuttle buses from off-airport parking areas.
- Police details will be employed at appropriate locations on the airport to manage traffic and ensure public safety.

6.9.5.2 Air Quality

As part of its continued commitment to reduce impacts to the environment, Massport will require contractors to retrofit their heavy construction equipment with advanced pollution control devices during construction in accordance with DEP's Clean Air Construction Initiative. Contractor-owned equipment such as front-end loaders, backhoes, cranes and excavators will be retrofitted with oxidation catalysts. This device filters out and breaks down hydrocarbons, particulate matter and carbon dioxide associated with diesel emissions. Contractors would also have the option of using alternative fuel vehicles.

Additionally, air quality impacts will be minimized using the following techniques:

- During the construction process, a regular program of street sweeping will be employed to minimize dust from construction vehicle movements on airport roads.
- Fugitive dust also will be controlled with water spray as needed during demolition and construction; no chemical soil stabilizers will be used.
- All trucks hauling demolition materials and excavate from the site will be covered. Truck wheel washing will be performed prior to vehicles leaving the site to help suppress fugitive dust.

6.9.5.3 Noise

General construction noise will be limited using techniques such as:

- Use of concrete crushers or pavement saws for building demolition or similar construction activity;
- Use of local power grid to reduce the use of generators, to the extent practicable and feasible.
- Attaching: (1) intake and exhaust mufflers, shields, or shrouds; (2) noise-deadening material to inside of hoppers, conveyor transfer points, or chutes.
- Limiting: (1) the numbers and duration of equipment idling on the site; (2) the use of annunciators or public address systems; (3) the use of air or gasoline-driven hand tools.
- Configuring, to the extent feasible, the construction site in a manner that keeps loud equipment and activities as far as possible from noise-sensitive locations.

When construction is scheduled during the nighttime hours and near the community sensitive areas (i.e., Bayswater, Winthrop) the following noise mitigation measures will be employed:

- The use of backup alarms for all pieces of equipment will be prohibited. The Contractor will be required to provide additional laborers to assure that equipment backup is safe and complies with OSHA regulations.
- Trucks delivering bituminous concrete or other materials will be prohibited from slamming their tail gates to clean out the beds of their trucks after dumping.
- During paving operations, the contractors will be required to turn off their vibratory compactors prior to exiting off of the newly placed pavement and onto the old existing pavement.

Further noise control options will be evaluated when the project design commences to define their effectiveness and feasibility. Appropriate operational specifications and performance standards will be incorporated into the construction contract documents.

6.9.5.4 Water Quality

A site-specific Stormwater Pollution Prevention Plan (SPPP) will be required of all contractors in accordance with EPA regulations to mitigate water quality impacts and to keep the airport's existing stormwater system free of sediment and contaminants during construction. The SPPP will be developed as part of the construction NPDES permit.

In accordance with the SPPP, extensive siltation controls will be installed prior to the commencement of construction and maintained until the project area is fully stabilized. Because of the airfield's flat topography, erosion is more controllable than on more variable topography. Precipitation falling on or running into the excavation area will be

collected at sumps and pumped to stormwater and dewatering detention tanks. The siltation controls will include, but not be limited to, siltation fencing, haybales, haybale checkdams, temporary seeding, inlets controls and regular Best Management Practices (BMP) inspections.

6.9.5.5 Overall Project Construction Mitigation

In addition to the specific measures cited above, Massport has developed a number of mandatory construction mitigation procedures for all construction contractors. Massport will be responsible for overseeing all activities related to the proposed Airside Project improvements including the following management practices:

- Full coordination with the CA/T Project, and with all relevant agencies including the FAA, MBTA, Massachusetts Turnpike Authority, Massachusetts DEP, Massachusetts CZM, Massachusetts Water Resources Authority (MWRA), City of Boston, Boston Water and Sewer Commission (BWSC), and utility companies, as appropriate.
- Preparation of detailed pre-construction plans for traffic maintenance, construction specifications for contractors, and coordinated scheduling of all construction activities (as well as the other measures noted in the ground transportation section above).

General construction practices will be established by Massport for all work to be performed on the Airside Project. These practices will incorporate in the contract specifications the following elements:

- Hours of work generally will be limited to typical working hours of 7:00 AM to 3:00 PM, when feasible and practical, depending on traffic and travel conditions. When necessary, as in the construction of Runway 14/32, a second shift will be employed with typical working hours of 3:00 PM to 11:00 PM. There are periods, however, when construction at night and/or on weekends when airfield activity is low, is the most appropriate and safe period for construction. Such periods are the crossing of major runways and taxiways, and construction of the Southwest Taxiway system. This night and weekend activity will serve to reduce the overall duration of the heavy construction period.
- An additional shift between 11:00 PM Friday and 2:00 PM Sunday may be scheduled when the contractor has to work within operationally sensitive areas. In these instances, the contractor will be required to concentrate on one isolated location on the airfield to complete all of the required work within the 39 hours allocated. Construction activities involving the existing runways and taxiways would occur during this construction shift.
- A list of construction Do's and Don'ts will be distributed to all construction workers during pre-construction orientation meetings. This simple set of guidelines and rules (developed in concert with the local East Boston community) will help keep the construction program safe, efficient, and non-disruptive.
- As previously noted, all trucks will access the site by the main airport roadways and the Ted Williams Tunnel only. Use of the Haul Road through South Boston will further limit

truck traffic on local streets. Trucks will be prohibited from using local streets, except for a short section of Neptune Road that provides access to the North Gate or by contractors when seeking access to local businesses.

- A transportation management plan will be required of the contractor. Subject to the review and approval of Massport, this plan will describe how the contractor intends to comply with the on-airport employee parking restrictions set by the terms of the Airside Project improvements construction contract.
- Fugitive dust will be controlled through wetting, sweeping, and other dust suppression techniques. Massport will require contractors to maintain on-site water trucks. All trucks hauling materials and excavate from the site will be covered.
- Soils borings, testing and environmental characterization in the area of the proposed project will be conducted.
- A Soils Use Policy will be developed. Based upon the practices and procedures of a soils management plan similar to that developed for Logan Airport Modernization, as well as a detailed program of subsurface investigations in the airfield, the plan will outline standards and procedures for the identification, handling and disposal of contaminated materials that may be encountered on the airfield. Soil tracking protocols will be detailed from the point of excavation to designated stockpile areas and to the ultimate disposal site.
- A Health and Safety Plan similar to that developed for Logan Airport Modernization will be adapted to establish the minimum health and safety standards that contractors must meet during construction on the airfield. This includes requirements for environmental monitoring, personal protective equipment, site control and security, and training.
- Massport will work with the contractor to encourage the recycling of materials, including construction debris from the demolition of Buildings 60 and 61, pavement grindings and suitable excavate, during construction of the airfield improvements.

6.9.5.6 Agency and Community Coordination

In order to ensure that all best efforts to mitigate construction impacts are continued throughout the construction process, Massport will carry out the following ongoing mitigation efforts:

- Placement of personnel and equipment to monitor and report on the status of construction, construction-related impacts, and the effectiveness of mitigation measures.
- Creation of specific construction-related performance standards for incorporation in construction contracts.
- Publication of periodic community newsletters advising the public as to the status of the project.

6.10 Adverse Impacts Which Cannot Be Avoided

Implementation of the Preferred Alternative will reduce the population within the 70 and 75 dB DNL noise contour but is predicted to increase the noise-impacted population within the 65 dB DNL noise contour by about 2 percent. Affected residences will be sound insulated to mitigate this impact. Measures will also be employed to mitigate impacts to the tenants of Cargo Building 60 that will be displaced by construction and to provide off-site habitat enhancement for the upland sandpiper habitat that will be lost due to construction of the Centerfield Taxiway.

6.11 Short-Term Uses and Long-Term Productivity

Logan Airport is an important element in the regional transportation network and a key factor in the economy of New England. Implementation of the Preferred Alternative, which includes Runway 14/32, will improve the efficiency, safety and reliability of current and projected operations at Logan. No other viable Alternative that would accomplish the goals of the Preferred Alternative exists. The Preferred Alternative would reduce annual runway delays and virtually eliminate delay associated with northwest wind conditions. Construction of Runway 14/32 increases the FAA's runway selection options to the extent that the achievement of PRAS goals is predicted to nearly double compared to the No Action Alternative. Similarly, by increasing operations over water, Runway 14/32 reduces the total annual hours of dwell and persistence over populated areas in accordance with short-term PRAS goals. As a result, the Preferred Alternative would be effective in reducing the population in severely impacted communities within the 70 and 75 dB DNL noise contours.

As noted in preceding sections of this Supplemental DEIS/FEIR, the impacts associated with the Preferred Alternative include: the dislocation of the tenants of Cargo Building 60, a two percent increase in the population within the 65 dB DNL noise contour, and the loss of approximately 37 acres of upland sandpiper habitat. An extensive series of mitigation measures and commitments are proposed to address these impacts, including the provision of relocation assistance to the cargo building tenants in accordance with applicable laws and sound insulation of affected residences within the 65 dB DNL noise contour. Sound insulation of the few historic residential properties within this contour will be undertaken in accordance with standards established by the Secretary of the Interior (36 CFR 800.5(b) – see Appendix H for a copy of the letter from the Massachusetts Historical Commission, December 21, 1999.) A Conservation and Management Plan has been developed to provide a long-term net benefit to the upland sandpiper population, including off-site restoration of 150 acres of habitat.

In consideration of the benefits to be derived from the Preferred Alternative and the measures to be employed to mitigate impacts, the short-term use of resources required to implement the proposed action is consistent with the long-term goal of improving the efficiency and reliability of airside operations at Logan.

6.12 Irreversible and Irretrievable Commitment of Resources

Implementation of the Preferred Alternative would require certain irreversible and irretrievable commitments of resources; however, there are no new, unusual, or limited sources of materials associated with the Preferred Alternative. Construction of the runway and taxiway improvements will consume fuel and result in the consumption of raw materials such as gravel, concrete and other materials required for the construction process. Materials from demolition of existing structures will be recycled to the extent possible. There are no materials required for the construction or operation of the Preferred Alternative that are known to be in short supply. Although there will be some impacts to natural resources, measures will be implemented to mitigate both short-term (construction) and long–term impacts to the greatest extent practicable.

7 Cumulative Impacts

Key Points

In the Airside Improvements Planning Project Draft Environmental Impact Statement/Environmental Impact Report (Airside Project Draft EIS/EIR), Chapter 7 presented an assessment of incremental environmental impacts of the alternatives in the context of other landside projects and identified the interrelationships/independence of Massport's airside and landside initiatives. This chapter of the Supplemental Draft EIS/Final EIR (DEIS/FEIR) presents an updated construction management plan that quantifies the number of daily and total truck trips and includes construction activity that will occur simultaneously with the Central Artery/Tunnel construction in East Boston, other Logan Airport projects, and any other major construction activities planned to occur in East Boston.

- The Logan Airside Improvements Planning Project (Airside Project) has independent utility, and will not stimulate, preclude or otherwise determine other development anticipated as part of Massport's landside planning efforts. The Airside Project is needed whether or not passenger levels at Logan International Airport (Logan) continue to grow.

- The Airside Project noise assessment is cumulative by its nature, examining all aircraft operations, including in-flight as well as ground taxi noise. By reducing delay and increasing the ability to meet Preferential Runway Advisory System (PRAS) goals, the Preferred Alternative (Alternative 1A) provides a significant reduction in noise for the most severely impacted areas. After sound insulating to mitigate impacts within the 65 decibel (dB) day-night sound level (DNL) noise contour, the Preferred Alternative provides net long-term benefits.

- There are no significant aircraft noise impacts associated with the operation of the other present and reasonably foreseeable landside projects at Logan, and therefore no cumulative noise impacts created by the combination of these projects with the proposed Airside Project improvements. The future fleet forecasts and airport operations associated with the proposed terminal improvements at Terminal B and Terminal E, and the proposed replacement of Terminal A, are consistent with the analysis assumptions made for the Preferred Alternative.

- There are no long-term cumulative air quality impacts. The Airside Project air quality assessment evaluated cumulative impacts associated with all airport-related sources of air emissions, including on- and off-airport motor vehicles. Results indicate that overall air quality impacts are beneficial or will remain within the National Ambient Air Quality Standards (NAAQS).

- A cumulative air quality benefit is achieved as a result of the net effect of the Airside Project, the Logan Modernization landside projects, and the Central Artery/Tunnel (CA/T) improvements, which independently produce positive air quality benefits.

- Construction traffic from the proposed Airside Project improvements associated with the Preferred Alternative would not add significantly to the existing volume of traffic. Peak airside project truck traffic is estimated to be approximately 184 trips per day.[1] This is reduced significantly from 648 peak truck trips presented in the Airside Project Draft EIS/EIR as a result of the reduction of soil material to be removed off-site. Construction vehicles on Logan associated with the Airside Project represent less than 0.2 percent of the total traffic volume and will not have a significant impact on the regional highway system.

7.1 Introduction

As the discussion in the preceding chapters demonstrates, Logan Airport is a multi-faceted facility that involves a wide variety and level of transportation-related operations that have various environmental impacts. From both functional and environmental impact perspectives, Logan can be divided into two components: landside facilities and airside facilities. Functionally, the landside facilities are those which accommodate the ground movement of passengers to-and-from Logan and to-and-from aircraft. Landside facilities consist primarily of roadways, vehicular parking lots and garages, passenger terminals, and airport service areas. The primary functions of the airside facilities are to accommodate aircraft operations (i.e., landings and takeoffs) and movements (i.e., taxiing). The airside facilities consist of Logan's runways, taxiways and apron areas.

Analysis and consideration of both project-specific and cumulative environmental impacts are important elements in the Massachusetts Port Authority (Massport) process for identifying and, where appropriate, recommending and implementing capital improvement projects. For those project concepts which meet certain established regulatory threshold criteria, the environmental evaluation process is formalized through appropriate documents prepared and submitted for public review in accordance with both federal law (the National Environmental Policy Act (NEPA) as amended), and pertinent implementing regulations and agency orders, and state law (the Massachusetts Environmental Policy Act (MEPA) as amended), and pertinent implementing regulations.

Environmental review of Logan Airport operations takes place at two levels. The first is a comprehensive, cumulative analysis in the form of the state required Logan Airport Generic Environmental Impact Report (GEIR) now known as the Logan Airport Environmental Status and Planning Report (ESPR), and associated Logan Airport Annual Updates, now known as Environmental Data Reports (EDRs). The GEIR/ESPR cycle, which includes the *1994/95 GEIR, 1996 Annual Update, 1997 Annual Update*, and the *1998*

1 92 round trips equal 184 total trips.

Annual Update, and the recently submitted *1999 ESPR* (i) presents annual environmental conditions for noise, ground access, air quality and water quality, and assesses the cumulative impacts of current and predicted levels of the various types of operations on both the landside and airside facilities; (ii) reports on the status of planning, design, and construction activities at Logan, and (iii) presents and tracks Massport's mitigation commitments. The GEIR/ESPR provides context to on-going planning at Logan and is intended to enhance Executive Office of Environmental Affairs' (EOEA's) and FAA's review of individual project concepts.

The second level of environmental review is project specific. Potential improvement projects that proceed from the planning to the proposal stage are also subject to individual project NEPA and MEPA review if such projects fall within established guidelines. The level of such review varies, and may include initiating a federal Environmental Assessment (EA) or Environmental Impact Statement (EIS) in anticipation of Federal Aviation Administration (FAA) funding or layout plan approval, and/or filing an Environmental Notification Form (ENF) to initiate the state review process that may include the preparation of an Environmental Impact Report (EIR). The focus of individual project review centers on the comparative analysis of impacts/benefits associated with various project alternatives, including the Preferred Alternative and a No Action Alternative. Both federal and state individual project review also includes consideration of project impacts within a cumulative project impact context.

This Airside Project Supplemental DEIS/FEIR assesses cumulative environmental impact in accordance with Council on Environmental Quality (CEQ) regulations and guidance[2] and FAA implementing directives, as well as the MEPA regulations, respectively. CEQ defines cumulative impact as that "which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions..." (CEQ, 40 CFR 1508.7). In determining the scope of environmental documents with regard to cumulative impact, the CEQ requires that agencies consider actions which may be "connected" (i.e., actions that automatically trigger other actions, cannot proceed in the absence of other actions, or are interdependent parts of a larger action), "cumulative" (i.e., when viewed with other actions have cumulatively significant impacts), or "similar" (i.e., when viewed with other reasonably foreseeable or proposed actions have similarities that provide a basis for evaluating their consequences together.) This information is provided in Section 7.3.

The purpose of the Airside Improvements Planning Project is to address aircraft operating delays and to enhance the safety of the Logan airfield. The proposed Airside Project improvements focus on improving the efficiency of aircraft operations. These proposed airside improvements serve a functionally different purpose than the many different landside projects that are designed to improve the ground access of passengers to and from Logan and to and from aircraft, or to improve passenger processing and services.

2 "Considering Cumulative Effects Under the National Environmental Policy Act," Council on Environmental Quality, January 1997.

The Airside Project has independent utility, and will not stimulate, preclude, or otherwise determine other development anticipated as part of Massport's landside planning effort. None of the past, present, or foreseeable future projects described in Section 7.3 are functionally or economically interdependent with the proposed Airside Project. The project will not foreclose future options or irretrievably commit resources to future projects. Therefore none of the past, present or reasonably foreseeable future landside projects are functionally "similar" or "connected" with the Airside Project.

In accordance with the FAA directives, as the lead federal agency under NEPA, this Airside Project Supplemental Draft EIS addresses the question of whether the environmental effects of the proposed Airside Project will cause cumulative environmental impacts when added incrementally to the environmental effects of past, present and reasonably foreseeable future actions at Logan.

In addition, this chapter provides an analysis of short-term cumulative impacts from construction activities associated with the Preferred Alternative. This cumulative impact analysis is conducted within the context of short-term construction impacts associated with other projects that are anticipated to be in the construction stage at the same time the construction program for the Preferred Alternative is underway as specified in the May 7, 1999 EOEA Certificate. See Section 7.5 for a discussion of cumulative construction impacts. Section 7.5.1.1 includes a refinement of the truck traffic projected in the Airside Project Draft EIS/EIR from both the Preferred Alternative and other concurrent on-airport projects.

7.2 Relationship to the GEIR/ESPR

The Logan Airport 1994/95 Generic Environmental Impact Report (GEIR) and its *1996, 1997* and *1998 Annual Updates*, EOEA # 3247/5146, (collectively the GEIR) and the subsequent *1999 Environmental Status and Planning Report* (ESPR), EOEA # 3247, provide a comprehensive evaluation of the cumulative effects of growth and change at Logan and serve as a planning tool for current and future projects proposed by Massport. The GEIR/ESPR provides an overview of the relationship of airport operations, as a whole, to local and regional noise, ground access, air quality, and water quality conditions. Individual projects such as the Airside Improvements Planning Project, are described in the GEIR/ESPR. These projects subsequently undergo individual project review under NEPA and/or MEPA if environmental review thresholds are met.

This Supplemental DEIS/FEIR provides in-depth analysis of Logan's future airfield operating conditions with and without the Preferred Alternative. This Supplemental DEIS/FEIR builds upon the Airside Project Draft EIS/EIR and the GEIR/ESPR in its analysis of impacts, and provides a broader understanding of the potential benefits and impacts of proposed changes to existing and future Logan airside operations.

The analysis conditions presented in the GEIR/ESPR are consistent with those used for the Supplemental DEIS/FEIR. Both documents evaluate future conditions at Logan associated with annual passenger levels of 29 million and 37.5 million. The GEIR/ESPR evaluated

impacts for future analysis conditions and all passenger levels using a mid-range aircraft fleet. The *1999 ESPR* evaluated a high "Regional Jet" fleet (High RJ Fleet) for the 37.5 million annual passenger activity level. To more fully identify the range of potential impacts associated with future airfield operations, this Airside Project Supplemental DEIS/FEIR expanded the GEIR/ESPR airport operational analysis by evaluating both a High and Low range Fleet that bracketed the GEIR/ESPR mid-range fleet assumptions. In addition, this Supplemental DEIS/FEIR also evaluates the 37.5 million annual air passenger fleet with a high proportion of regional jets (High RJ Fleet). These fleets represent a range of operational scenarios, reflecting higher and lower numbers of aircraft operations and fleet mixes to deliver the same specific passenger level. In this manner, the impacts of Airside Project proposed improvements are identified as a function of aircraft operations.

This Airside Project Supplemental DEIS/FEIR provides a comprehensive analysis of cumulative impacts associated with the Preferred Alternative. It involves a review of impacts generated by airfield operations (i.e., aircraft takeoffs and landings and taxiing) for 1993 Historic Modeled Conditions, 1998 Actual Conditions and future scenarios of 29 million annual air passengers with a Low Fleet assumption (29M Low Fleet), and 37.5 million air passengers with an RJ Fleet as well as the High Fleet (37.5M High Fleet). The impact analysis applicable to future years is based on passenger forecasts and fleet forecasts and employs detailed modeling. (See discussion at Chapter 4.0 for assumptions and other details of these forecasts and modeling techniques.) The *1994/95 GEIR* provided a similar review of comprehensive impacts for such operations, based on identical passenger forecasts and similar modeling techniques.

As discussed in more detail in the following sections, this Airside Project Supplemental DEIS/FEIR supplements the analysis of impacts from airside operations that was provided in the *Logan Airport 1994/95 GEIR* and the *1996, 1997, and 1998 Annual Updates* and the *1999 ESPR* by including the following:

- Analysis of high and low aircraft fleets scenario, compared to analysis of mid-range fleet in the GEIR;
- New cumulative noise impact analysis which takes into account changes in runway utilization that result from some of the improvements under review and a greater ability to achieve PRAS goals; and
- New cumulative air quality impact analysis based on changes in aircraft taxiing routes and patterns that are intended to result from certain of the improvements under review.

It should be noted that the GEIR/ESPR air quality comprehensive impact analysis is based on two component categories of operation, landside and airside. The air quality analysis provided in this Airside Supplemental DEIS/FEIR supplements the GEIR/ESPR analysis only to the extent that it incorporates changes associated with the proposed Airside Project improvements. Airside Project improvements under review do not relate to or affect any of the landside facilities or operations, and consequently, do not change any of the air quality impact analysis of landside facilities or operations presented in the GEIR/ESPR.

Overall, this Airside Supplemental DEIS/FEIR complements the findings of the GEIR/ESPR and provides an analysis of the potential cumulative impacts and benefits of the airside and landside projects. The assessment of the environmental effects of airport operations described in the *1994/95 GEIR* and the *1996, 1997, and 1998 Annual Updates* and the *1999 ESPR* are incorporated by reference in this Supplemental DEIS/FEIR and provide a starting point for the environmental impact analysis presented in this Supplemental DEIS/FEIR.

7.3 Relationship of the Logan Airside Improvements Planning Project To Other Logan Projects

The purpose of the Airside Improvements Planning Project is to reduce current and projected levels of airfield congestion and delay and to enhance the safety of aircraft operations at Logan. Massport's proposed landside improvements are planned to enhance the efficiency of passenger processing, and include terminal modernization, as well as roadway, parking and service area improvements. The landside projects will not affect the design or implementation of the Airside Project, which has independent utility, nor will the Airside Project improvements affect the design or implementation of any of the landside projects.

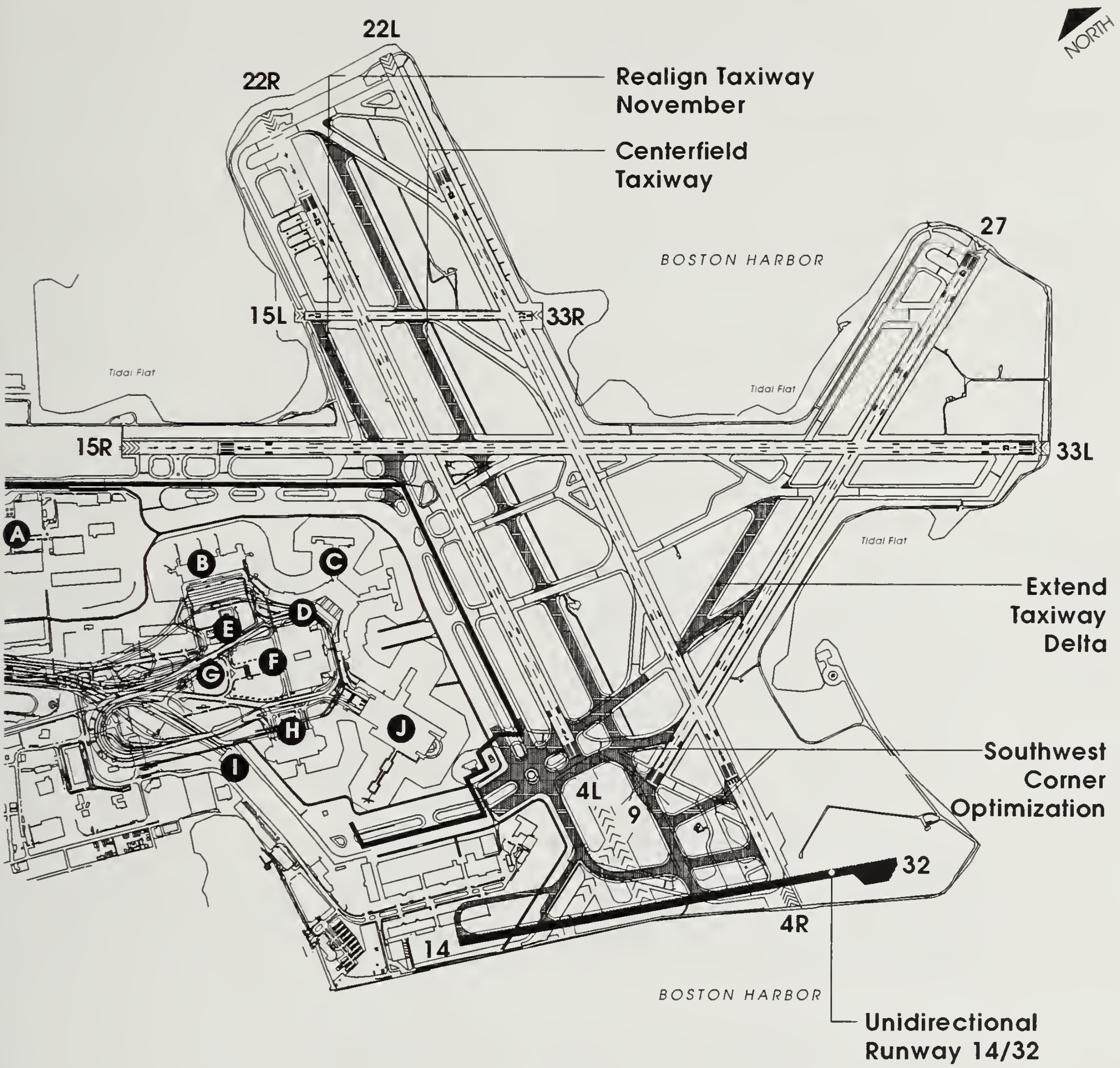
All other airside and landside projects, where required, will continue to be the subject of separate comprehensive environmental analysis by project proponents in accordance with federal and state regulations.

A summary of other Massport projects follows (See Figure 7.3-1 for the project location.). For additional information, please refer to the *Logan Airport 1998 Annual Update*[3] and the *1999 ESPR.*[4]

7.3.1 Logan Modernization Projects

Logan Modernization is a Massport capital investment program currently underway to address current and future passenger activities and facilities. Logan Modernization consists of projects that will modernize the terminal areas and other landside facilities to address problems of terminal overcrowding, roadway congestion and inadequate parking. Implementation of Massport's proposed terminal projects as described below will enable Logan to provide modern, efficient service to its passengers.

3 *Logan Airport 1998 Annual Update*, prepared for Massport by Vanasse Hangen Brustlin, Inc. October 15, 1999.
4 *Logan Airport 1999 Environmental Status and Planning Report*, prepared for Massport by Vanasse Hangen Brustlin, Inc. December 15, 2000



A. Jet Fuel Storage and Distribution Facility*

B. International Gateway

C. United Airlines Terminal C Improvements

D. Central Garage * Modifications

E. Central Heating/Cooling Plant Upgrade

F. West Garage *

G. Replacement Hilton Hotel*

H. Terminal A Replacement

I. CA/T

J. Terminal B Improvements

LEGEND

Proposed Taxiway
Proposed Runway

* Construction Completed (as of November 1999)

massport

Figure 7.3-1

Foreseeable Projects: Airside and Landside

7.3.1.1 West Garage Project, Elevated Walkways and Terminal Roadways

In March 1995, the West Garage Project Final EIR/EA was determined by the Secretary of Environmental Affairs to adequately comply with MEPA. The FAA issued a Finding of No Significant Impact (FONSI). This FONSI considered the impact of past, present, and foreseeable projects.

Phase I of the West Garage Project opened in September 1998. This project consolidated 3,150 parking spaces from remote, at-grade parking lots serving Logan Airport, and offset the loss of spaces to other Logan Airport landside construction projects.

With the West Garage addition in the terminal area parking complex, Logan Airport created a convenient Central Parking Facility to serve the terminal area. Elevated pedestrian walkways link the facility to the four terminals. Walkways with moving sidewalks connect the West Garage to Terminals A and E, including walkways with floor mosaics, which became the largest public art installation in New England. In 1999, the construction of the walkways to Terminals B and C began, with expected completion in 2001. Public art features will also be featured on these walkways.

Massport has evaluated design options for Phase II of the West Garage and has concluded that the most cost effective way to proceed with Phase II is to add three levels of parking to the Central Garage rather than provide the spaces in the location originally planned. A Notice of Project Change (NPC) was filed with the Executive Office of Environmental Affairs, Massachusetts Environmental Policy Act (MEPA) Office on October 31, 2000 describing the proposed changes and associated environmental impacts. The Secretary's Certificate on the NPC, issued December 8, 2000, indicated that no further MEPA review is required.

Terminal roadway improvements will be coordinated with the CA/T and Logan Modernization projects to incorporate the airport roadway system into the regional highway system and to improve vehicle capacity and access to the terminals. The roadway improvements have been designed. Construction has commenced and is expected to be completed in 2002.

7.3.1.2 International Gateway/Federal Inspection Services

The International Gateway Project is being built in response to the continued growth in international activity by both US and foreign flag carriers at Logan Airport. As New England's principal international gateway, Logan Airport and Terminal E are critical links for the City's and region's economy to an increasingly global marketplace. A state-of-the-art, high-efficiency facility will enlarge Logan Airport's congested Federal Inspection Services (FIS) facility, the meeter/greeter lobby, and the ticketing area, and ultimately maximize passenger convenience and reduce processing times. The FIS facility will be located south of the existing Terminal E. Additionally, to reduce curb and roadway congestion at the terminal, this project also includes a new double-decked roadway system for arrivals and departures.

The Final EIR/EA for the International Gateway Project was determined to adequately comply with MEPA in December 1996. The FAA issued a FONSI under NEPA. This FONSI considered the impact of past, present, and foreseeable projects.

Construction of Phase I of the International Gateway Project began in 1998, with an anticipated completion in 2003. Phase II, a new West Concourse, which will add three gates to handle international activity, is anticipated to commence sometime after 2003.

The Central Cooling and Heating plant is being rehabilitated to support both the existing facility requirements and the Logan Airport Modernization projects. These heating and cooling upgrades will be constructed in phases. The project will support the new FIS facilities and include the replacement of cooling towers and other facilities to provide adequate service, airport wide. Construction began in 1998 and is expected to be completed in 2001.

7.3.1.3 Airport Intermodal Transit Connector

The Airport Intermodal Transit Connector (AITC) project is part of an interagency effort undertaken by Massport and the MBTA. The proposed AITC will provide a user-friendly transit alternative for air passengers and other users of Logan Airport such as employees and meeters/greeters. The AITC will be a "dual-route," enhanced bus service that will directly connect Logan Airport with South Station (the red route) via the Ted Williams Tunnel and the South Boston Transitway, and with the MBTA Blue Line (the blue route).

The two-route AITC bus system will expand the intermodal reach of Logan Airport. It will represent a new public transportation route between Logan Airport and South Station, and will improve intermodal links between Logan Airport and the MBTA Red Line, the commuter rail, and the intercity rail (Amtrak). The new Airport Station will provide an improved connection to the AITC Blue line; it also may become a stop on the MBTA's proposed Circumferential Transit service. The AITC will create an alternative option for a one-seat ride from both the Financial District and the South Boston Seaport District to the Logan Airport terminals.

Both routes of the AITC are expected to be fully operational by 2003 with timing dependent upon completion of the MBTA's South Boston Piers Transitway Project and the new MBTA Blue Line Airport Station. The AITC is currently on the Massachusetts Transportation Improvement Program (TIP), making it eligible for Federal funding. Massport is working with the MBTA to procure new buses for the AITC and to address other issues regarding operations, maintenance, scheduling, and program requirements.

Logan DART

In the interim until the AITC is operational, a new Massport sponsored shuttle service began operation on November 15, 2000. The service is named the Logan DART and operates Sunday through Friday from 6 AM to 8 PM. There are two stops at South Station; at Gate 25 and outside

on Summer Street. The service uses the Ted Williams Tunnel to travel between South Station and Logan Airport, with buses leaving every 15 minutes. The vehicle stops at all terminals at Logan Airport. The fare is $5 each way with discounted fares for Logan Airport employees and Logan Employee Transportation Management Association (TMA) members.

7.3.1.4 Terminal A Replacement

Massport is currently working with Delta Air Lines to implement the replacement of Terminal A with a contemporary terminal facility. The replacement terminal is designed to enable Delta Air Lines to process current and forecasted passenger throughput with a high degree of passenger amenity, safety, and efficiency. The facility consists of a main terminal located on the airport roadway with ticket and baggage services. This is linked via a pedestrian tunnel to a satellite concourse located along Harborside Drive. The satellite concourse has been designed to serve as a noise buffer between Logan Airport and the adjacent Jeffries Point neighborhood. The project design incorporates sustainable design and construction principles to minimize overall impact on the human and natural environment.

On December 8, 1999, an Environmental Notification Form (ENF) that describes the Terminal A Replacement Project was filed with MEPA. On January 7, 2000, the Secretary of Environmental Affairs issued a scope for the preparation of a Draft Environmental Impact Report (EIR). On May 31, 2000, a Draft EIR/Environmental Assessment (EA) was filed with MEPA and the Federal Aviation Administration (FAA). FAA issued a FONSI on September 13, 2000. This FONSI considered the impact of past, present, and foreseeable projects. A Final EIR was filed with MEPA on October 2, 2000, and on November 16, 2000 the EOEA Secretary approved the project with a finding that the Final EIR was adequate. No further environmental review is required.

7.3.1.5 Jet Fuel Storage Facility

A replacement Jet Fuel Storage Facility for the five existing, separately owned and operated facilities in the North Cargo Area was completed in October 1999. The new storage facility is now consolidated and upgraded from the former system and is managed by one entity. On-airport storage capacity is increased to support the types and numbers of planes expected to use Logan Airport. Consolidation allows Massport to strengthen environmental controls such as leak detection and spill containment and to improve safety equipment and management.

The Secretary of Environmental Affairs determined that the Final EIR for the jet fuel facility adequately complies with MEPA in May 1996. No further environmental review was required. The FAA determined the project to be categorically excluded under NEPA.

7.3.1.6 Jet Fuel Distribution System

A new underground Jet Fuel Distribution System around the airport's terminal areas also was completed in October 1999. The new system includes connections between existing and new individual terminal hydrant systems and an emergency fuel shut-off. The system

supplies jet fuel by a hydrant system to most aircraft gates. The Jet Fuel Distribution System has been designed and constructed to meet future fueling needs in accordance with industry engineering and environmental standards.

An ENF was filed with MEPA in January 1994. Notices of Project Change were filed in June 1995 and February 1996 which required no further review. The FAA determined the project to be categorically excluded under NEPA.

7.3.2 Other Terminal Area Improvement Projects

In addition to the Logan Modernization projects, Massport also planned or is anticipating a range of landside projects that will improve airport service areas, tenant facilities and airport maintenance programs, as described below.

7.3.2.1 Replacement Hilton Hotel

Groundbreaking for the Hilton Hotel took place in December 1997, and the hotel opened in Fall 1999. The site for the hotel is located on an 8.1-acre parcel in the central terminal area of Logan Airport, adjacent to the West Garage. The existing Ramada Hotel was demolished in 2000 to make way for the improved Main Airport Roadway.

Following the submission of an ENF in May 1996, the Massachusetts Executive Office of Environmental Affairs (EOEA) issued a decision in July 1996 granting a waiver from the preparation of an EIR. The FAA determined that the project was categorically excluded from the requirement for formal Environmental Assessment. In April 1997, the project proponent filed a Notice of Project Change to reflect a reduced building height and slightly increased building size. In May 1997, EOEA issued a Certificate requiring no further environmental review. The project was not subject to NEPA.

7.3.2.2 US Airways Terminal B Consolidation

As described in the *1997 and 1998 Annual Update*, US Airways is consolidating its mainline, Metro Jet, commuter, and Shuttle (formerly at Terminal A) operations in one location. To accommodate these operations, Terminal B's Pier B was modified. This project included the construction of a two-level addition totaling 65,000 square feet at the south end of Terminal B, Pier B, providing additional holdrooms, concession areas, baggage handling, and airside operations space. These improvements will allow US Airways to operate more efficiently and will improve passenger service. Construction of the US Airways Terminal B Consolidation Project began in 1999 and is expected to be completed by 2002. The FAA determined the project to be categorically excluded under NEPA.

7.3.2.3 United Airlines Terminal C, Pier B Improvements

United Airlines is consolidating its services and facilities from different terminals to Terminal C, Pier B. An ENF was submitted to the Secretary of Environmental Affairs in April 1998 and a Certificate requiring no Environmental Impact Report was issued in May

1998. The FAA determined the project to be categorically excluded under NEPA. Construction of the project began in early 1999 and will be completed in 2001.

7.3.2.4 American Airlines Terminal B, Pier A Improvements/ Massport Satellite FIS Facility

Massport and American Airlines are proceeding with improvements to Terminal B, Pier A, to better accommodate current passenger demands and anticipated future passenger growth. American Airlines proposes to consolidate all of its Boston operations, including its existing domestic and international operations, into one location. American plans to do this by renovating the existing Pier A of Terminal B to provide improved circulation, ticket space, baggage handling, concessions, and other amenities. To accommodate more efficiently the growing international market, Massport proposes to construct a new satellite FIS facility at the southeast end of Terminal B, Pier A.

On May 31, 2000, a joint Massport/American Airlines ENF was filed with MEPA. On June 7, 2000, the Secretary of Environmental Affairs issued a Certificate on the ENF requiring an EIR. On August 24, 2000, the FAA determined the projects to be categorically excluded under NEPA. The projects meet the General Conformity requirements of the Clean Air Act, as amended.[5] Massport and American Airlines are now proceeding with the preparation of a Draft EIR for these projects.

7.3.3 Other Service Area Projects

Massport is engaged in on-going strategic planning to explore ideas for more efficient use of limited land resources within the airport service areas. The four airport service areas at Logan are the North Service Area/North Cargo Area, Southwest Service Area, Bird Island Flats/South Cargo Area, and Governors Island. Service area activities include but are not limited to the following: freight/air cargo operations, aircraft maintenance, food preparation, and airfield and facilities maintenance. Table 7.3-1 provides a brief description of projects and planning concepts in the service areas, both Massport-sponsored and tenant-sponsored, that have evolved since the submission of the *Logan Airport 1998 Annual Update* and *the Airside Improvements Planning Project Draft EIR/EIS*. More detailed project descriptions follow.

7.3.3.1 ParkEx Relocation

According to a 1991 Memorandum of Understanding between Massport, MassHighway, the City of Boston, and Bremen Street Trust (owners of the ParkEX parking facility), the 1,377-space ParkEX facility was to be moved from its current 12-acre, off-airport location on Bremen Street to an 11-acre site that is currently used for rental car parking in the Southwest Service Area (SWSA) of Logan Airport.

The East Boston Three-Way Land Transfer ENF and EIR that were submitted to MEPA in Spring and Fall 2000, included a description of the relocation of ParkEX facility to the

5 Letter from John Silva, Manager, Environmental Programs, Federal Aviation Administration, New England Region, to Ken Hietbrink, American Airlines, and Betty Desrosiers, Massport. Dated August 24, 2000.

Table 7.3-1
Status of Airport Service Areas Projects and Planning Concepts

Massport Projects and Planning Concepts	Status of Planning, Design and Construction[1]
North Service Area/North Cargo Area – Uses include aircraft parking, cargo facilities, hangars, ground service equipment (GSE), employee parking, flight kitchens, construction staging and navigational equipment.	
Jet Fuel Storage Facility A replacement storage facility to consolidate, upgrade and increase capacity of the existing fuel farms.	Complete.
Jet Fuel Distribution System A new underground system to deliver jet fuel directly to most aircraft gates will meet future fueling needs in accordance with engineering and environmental standards.	Complete.
Replacement Cargo Buildings Replacement of aging and undersized cargo buildings, and of cargo facilities demolished due to CA/T roadway work will be required.	This concept is in the preliminary planning stages.
Replacement Hangar Facilities Replacement hangar facilities due to CA/T roadway work will be required.	This concept is in the preliminary planning stages.
Southwest Service Area – Serves as the airport ground transportation hub (car rental, taxi/bus/limousine pool, commercial parking).	
Consolidated Rental Car Facility Consolidated, structured rental car facility is being considered.	This concept is in the preliminary planning stages.
ParkEx-Transaction (formerly Park 'N Fly) Buy-Out Alternative.	Land Transfer Project underway.
Bird Island Flats/South Cargo Area – Uses include replacement cargo facilities, parking, and potential commercial development.	
Cargo Building 63 Cargo building located along Harborside Drive over a portion of the Ted Williams Tunnel.	Complete.
Water Shuttle Dock Improvements Dock to be expanded to accommodate the demand of additional vessels and to comply with handicapped accessibility requirements.	Construction will begin in summer 2001.
Tenant Improvement Projects	
United Airlines Ground Service Equipment Building Existing facility being demolished to make way for CA/T roadway work. Construction began on the new 17,000 square foot GSE facility in the North Cargo Area adjacent to the United Hangar in 1998.	Complete.
US Postal Service Facility Relocated USPS facility to meet future shipping needs. A new location has not yet been identified.	This concept is in the preliminary planning stages.

1 Status as of Winter 2001

SWSA, along with its environmental impact assessment. After the filing of the ENF and EIR, Massport, ParkEX, and the CA/T Project concluded that an alternative land transfer ("Buy Out Alternative") offered important environmental and operational advantages. The Buy Out Alternative involves the purchase of the Bremen Street lot by Massport, the transfer of this parcel to MassHighway to allow for the construction of a park, and the transfer of the Robie Industrial Parcel to Massport. No transfer of existing airport land is involved. The 1,377 parking spaces from the Bremen Street lot will be transferred to Logan Airport. The Buy Out Alternative better facilitates CA/T Project construction of the Route 1A interchange highway improvements than under the approved East Boston Three-Way Land Transfer. A Notice of Project Change (NPC) describing the Buyout Alternative was filed with MEPA on October 31, 2000 and EOEA determined that no further environmental review was required. Transfer of the Bremen Street lot and the Robie Industrial Parcel pursuant to the Buy Out Alternative was completed in January, 2001.

7.3.3.2 Robie Industrial Parcel

The Robie Industrial parcel, owned by Massport, is located adjacent to the North Cargo Area of the airport. The 6.9 acre parcel, a former airport industrial park, is currently used for airport parking and as a construction staging area for CA/T project construction. A replacement cargo building is proposed on the parcel.

7.3.3.3 Replacement Cargo Buildings

The demolition of air cargo buildings 12 and 13 to accommodate the CA/T roadways will sharply reduce Logan Airport's air cargo space in the North Cargo Area. In the North Cargo Area alone, more than 150,000 square feet of cargo building space is being demolished to accommodate the CA/T roadways. Replacement on-airport cargo facilities are needed in order to meet existing needs of the air cargo industry operating at Logan Airport.

7.3.3.4 Consolidated Car Rental Facility

Massport is evaluating the feasibility of consolidating rental car operations in the SWSA to accommodate all car rental operations. Storage and maintenance of portions of the rental car company fleets are currently dispersed throughout the service areas and at off-airport locations. A consolidated car rental facility would reduce the number of on-airport, shuttle bus trips that currently run between the individual car rental lots and the terminals. Rental car consolidation is a growing national trend at major commercial airports for its land use conservation, and reduced roadway impacts.

7.3.3.5 Water Shuttle Dock Improvements

Massport will be expanding the existing on-airport water shuttle dock to accommodate the growing demand for additional vessels and to comply with handicapped accessibility requirements. The project is not subject to MEPA or FAA NEPA review. Construction is anticipated to begin in 2001.

7.3.4 Tenant Improvements

Massport leases airport land and building space to a variety of public and private tenants who require proximity to the airport. Government offices include the Immigration and Naturalization Service (INS), the Department of Agriculture, and the FAA. Private tenants include cargo companies, flight kitchens, car rental agencies, and airlines. These tenants have the right to occupy, use and improve their leased areas, subject to and in accordance with their lease terms and all relevant federal and state regulations.

Tenant improvement activities involve a variety of projects including minor leasehold improvements such as non-structural alterations and minor cosmetic work, equipment installation, building additions and tenant relocations, as well as major capital investments by airlines to improve terminal facilities.

The majority of the tenant improvement projects are generally limited to renovation, repair, furnishing, or equipping existing building space. Tenant projects that are of a scope or character that meet any MEPA or NEPA threshold for environmental review proceed through the appropriate environmental review process.

Major tenant projects currently being evaluated, planned, or constructed in the service areas include the United Airlines Ground Service Equipment Building, replacement hangar facilities, and the USPS facility. Below are brief descriptions of each.

7.3.4.1 United Airlines Ground Service Equipment Building

The existing United Airlines ground service equipment (GSE) building was demolished for the CA/T project. Construction began in the fall of 1998 on a 17,000 square foot replacement facility in the North Cargo Area adjacent to the existing United Airlines Hangar. The building was completed and operational in late 1999.

7.3.4.2 United States Postal Service Facility

The United States Postal Service (USPS) Logan Airport Mail Center in the South Cargo Area provides the USPS with direct airside access to air transportation carriers. However, this facility is inadequate to accommodate future USPS shipping needs and must be replaced with a new facility that can provide continued, secure airside access. Although the USPS does not own or operate a fleet of aircraft, it does lease aircraft to accommodate both airmail and express package shipments. In addition, all major US carriers under contract with the USPS provide belly capacity to carry US mail under contract with the USPS. The major carriers provide both aircraft capacity and line-haul transportation. The line-haul function is on the apron where the airlines "tugs" mail to/from their aircraft to the air mail facility. The line-haul/tug operation therefore requires secure airside access. The North Cargo Area/North Service Area is one location under consideration for the replacement facility.

7.3.5 Airport Edge Buffer Projects

Massport's goal is to enhance the public edges of Logan Airport with attractive architecture and landscape improvements. Massport has committed up to $15 million to the planning, future construction, and maintenance of the Logan Airport Edge Buffers. These buffers include properties located in various areas generally along Logan Airport's perimeter boundary. (See Table 7.3-2).

The buffers will be designed in consultation with Logan Airport's neighbors and others through an open community planning process. To discuss East Boston open space planning, Massport also participates in meetings with other state and city agencies including MassHighway, the CA/T Project, the MBTA, the City of Boston's Environment Department, and the Boston Redevelopment Authority. The project is not subject to NEPA.

Table 7.3-2
Edge Buffer Projects

Edge Buffer	Status
Bayswater Embankment Buffer	In early 1998 through the Spring of 2000, Massport began a community planning process to develop a landscape beautification and streetscape improvement program for the Bayswater Embankment. In July 2000, construction began with expected completion in 2001.
Navy Fuel Pier Buffer	Massport is helping the Jeffries Point neighborhood facilitate the Army Corps of Engineers' (ACOE) remediation of this site, the former Navy Fuel Pier. The Jeffries Point Neighborhood Association is regularly briefed on the project's progress. ACOE expects to announce an appropriate remediation plan for the contaminated soil by Spring 2001. The schedule and scope of any remediation plan will help Massport and the neighbors develop an appropriate design and construction schedule. Massport intends to initiate a landscape design consultant selection process in early 2001.
SWSA Buffer	In the Spring of 1999, Massport selected a consultant team to lead the design process for the SWSA landscape buffer. Design of the SWSA buffer will be timed to coincide with other development in the SWSA (i.e. relocation of ParkEX). Massport described the SWSA Buffer and presented preliminary concept plans in the East Boston Three-Way Land Transfer ENF and EIR filing. In 2001, Massport has started a community planning process to design the SWSA Edge Buffer concurrent with the site's future development.
North Service Area Buffer	In January 1997, Massport selected a landscape architect/planning firm to lead the design process for the NSA Buffer. The team developed schematic designs with input from the neighbors. Due to neighborhood members' concerns over the possibility of increased public access near their homes, this project, at the request of the neighborhood, was put on temporary hold until further notice.

7.3.6 Other Airfield/Airside Improvement Projects

7.3.6.1 Blast Fence Removal

Recent accidents involving blast fences at airports across the US have highlighted the need to remove airfield barriers and raised awareness of this nationwide safety problem. The National Transportation Safety Board (NTSB), in a September 19, 2000 letter to Massport,

stated that the Blast Fence at the end of Runway 22R "constitutes a safety hazard and should be removed." In response, Massport has proposed the removal of the Blast Fence that was originally constructed in 1976. Subsequent to construction of the fence, the FAA developed safety regulations and policies that designate specific surfaces and areas around runways that must be maintained free of obstructions to maximize aviation safety. A detailed analysis of the Blast Fence found that it penetrates seven of nine applicable FAA safety surfaces and areas.

On November 30, 2000, Massport voluntarily filed an ENF to facilitate review by the adjacent communities and environmental agencies prior to removal of the fence. In February 2001, EOEA determined that no further environmental review was required. It is expected that the fence will be unbolted from its footings in sections and the dismantled wood pieces will be immediately removed from the airfield.

7.3.6.3 Runway 33L Safety End Improvements

The project involves constructing a safety area at the end of Runway 33L to accommodate aircraft overruns or overshoots in an emergency situation. Preliminary options are being discussed and evaluated with the FAA. Environmental documents will be filed once project concepts and alternatives are better defined. Since the project alternative analysis is not yet complete, the project is not reasonably foreseeable.

7.3.7 Other Major Projects

In addition to the Massport and tenant-related projects previously described, the following major projects will also occur on the airport, and are considered in the evaluation of cumulative impacts.

7.3.7.1 CA/T Project

The CA/T Project will link the Massachusetts Turnpike (I-90) to Logan by way of a four-lane tunnel beneath Boston Harbor. The Ted Williams Tunnel is complete and was opened to traffic in December 1995. In addition to the tunnel, the following three CA/T Project components involve construction on the airport:

- Contract C07D2, involving connections of the Ted Williams Tunnel to the main airport circulation roadway system that is now substantially complete;
- Contract C08A1, involving connections of the main airport circulation roadway system to Route 1A, and;
- Contract C07C1, involving construction of toll facilities.

Massport has worked closely with the MassHighway and the Massachusetts Turnpike Authority (MTA) to coordinate airport activities during the implementation of the CA/T Project in order to ensure efficient and uninterrupted operations. Construction of the airport-related components of the CA/T Project is estimated to be completed in 2002. The

CA/T Project has completed its own extensive MEPA/NEPA environmental review with the issuance of a Certificate and a Record of Decision (ROD).

7.3.7.2 Massachusetts Bay Transportation Authority (MBTA) Blue Line Modernization Program

The MBTA Blue Line Modernization Program includes improved station safety, cleanliness, lighting, barrier-free access to all Blue Line stations and lengthening of station platforms to accommodate six-car trains.

The MBTA is developing a new Logan Airport Station to be located about 400 feet north of the existing Logan Airport Station. Massport is consulting with the MBTA on the project's design and operational elements. The new Logan Airport Station will include modern passenger amenities such as wide escalators, oversized elevators, and real-time flight information displays in the station lobby. It will also provide a convenient at-grade connection to the neighborhood, AITC Blue Route and Logan Airport, and may become a stop on the MBTA's proposed Circumferential Transit (Urban Ring) service. There is no Federal FAA jurisdiction over this action.

7.3.8 Other Projects In East Boston

Other off-airport projects are expected to occur in East Boston in the foreseeable future as described below. These projects are still in the early stages of planning and design. They have not been subject to detailed quantitative and cumulative construction period impact analyses and no specific construction period has been established. While these projects might overlap in time with the construction of the Airside Project Improvements, they do not overlap geographically with the airside construction. Mitigation measures employed for the Airside Project are designed to avoid or minimize construction impacts off the airport and therefore, no cumulative construction impacts are anticipated as a result of these other East Boston projects.

7.3.8.1 Maverick Station

MBTA is updating the Maverick Station as part of the Blue Line Modernization program. The project is currently in preliminary design with construction anticipated in 2004.

7.3.8.2 Redevelopment of Massport Piers 1 and 5 and the Massport Shipyard

Redevelopment of Massport's Piers 1 and 5 and shipyard are still in the early planning phases. The plan for redevelopment of Pier 1 anticipates residential development, while Pier 5 is expected to be an expansion parcel for the adjacent marina. It is anticipated that the shipyard will be repositioned to decrease its impact on the adjacent community. Planning is in the preliminary concept stages.

7.4 Long-term Cumulative Effects

This section discusses the long-term cumulative effects of the proposed airside alternatives in the context of aircraft operations, and therefore focuses on a discussion of noise and air quality impacts. Other impacted resources discussed in the previous chapters, such as biotic communities, water quality and soils are associated only with this project and are limited to the confines of the airfield. Because these impacts are geographically isolated from other projects, they do not contribute to long-term cumulative impacts. The proposed Airside Project is consistent with local land use plans and will not result in the division or disruption of established communities, since all construction would occur on the airport.

The mitigation measures proposed for the Airside Project improvements minimize long-term adverse impacts. Therefore no long-term adverse cumulative impacts result from the implementation of the Airside Project improvements identified within the context of the Airside Project. Temporary construction impacts do result from the project and the potential for cumulative construction impacts has been considered. A discussion of the short-term cumulative impacts associated with the construction of the Airside Project improvements and other past, present, and reasonably foreseeable projects is presented in Section 7.5.

7.4.1 Noise

Ambient noise levels at Logan are dominated by noise from aircraft operations. A review of the environmental documentation for the Logan Modernization and CA/T projects was conducted to assess the potential for cumulative noise impacts.

The noise analysis conducted for the International Gateway evaluated impacts that might result from a change in the spatial arrangements for aircraft/vehicle operations at Terminal E. This analysis found that there are no impacts due to aircraft in-flight noise, since the project does not affect the projected volumes of air passengers, and thus, the number of flights (landings and takeoffs) at Logan. There were also no impacts due to ground noise at any of the community receptor sites analyzed in any year or scenario as a result of the International Gateway. When compared to the No-Build Alternative, the International Gateway would result in differences in noise levels of less than 0.7 decibels (dB) at all of the community sites for the 2010 future analysis. The FAA considers increases in day-night average sound level (DNL) over noise sensitive land uses of 1.5 A-weighted decibels (dBA) or greater to be the threshold of significant noise impacts in areas above 65 dBA, measured in DNL.

The cumulative noise analysis conducted for the Terminal A Replacement Project also determined that there were no significant noise impacts associated with improvements at Terminal A. [6]

6 Terminal A Replacement Project, Federal Environmental Assessment, May 31, 2000.

Noise analysis conducted for the CA/T Project in the East Boston/Logan Airport area found no impact based on the Federal Highway Administration (FHWA) noise criteria at 12 of the 13 receptor sites evaluated. A minor noise impact from the CA/T Project at the East Boston Memorial Stadium Park was identified in the CA/T Project Final Supplemental Environmental Impact Report (FSEIR).[7] The current design of the project in this area however, does not require mitigation.

Given the fact that there are only minor impacts in discrete areas associated with any of the other concurrent projects at Logan, there are no material cumulative noise impacts created by the combination of these projects with the proposed Airside Project improvements.

Aircraft operations are the determining factor in evaluating noise impacts associated with airport operations. By examining the effect of all aircraft operations, including in-flight as well as ground taxiing noise, the assessment of noise impacts conducted for the Airside Project is cumulative in its approach. Cumulative noise metrics used in the Airside Project Draft EIS/EIR analysis included DNL and Time Above (TA) specified threshold sound levels. DNL noise exposure contours are a graphical representation of how cumulative noise from Logan's aircraft operations is distributed over the surrounding area on an average day of a given year.

Implementation of the Preferred Alternative (Alternative 1A) was shown to reduce delay and provide Air Traffic Control (ATC) with a greater ability to meet the Preferential Runway Advisory System (PRAS) goals. The Preferred Alternatives also reduce ground noise by reducing taxiing queues. The results of the noise impact assessment indicate that for all future fleets and scenarios, the Preferred Alternative provides a significant reduction in the most severely affected populations in East Boston, Winthrop and Revere that are within the 70 and 75 dB noise contours. They result in a slightly larger population within the 65 dB DNL in Chelsea due to a greater use of Runway 33L in accordance with PRAS goals. This impact will be mitigated by sound insulating affected residences within the 65 dB contour. (See Section 6.2 for a detailed discussion of noise assessment results.)

7.4.2 Air Quality

The air quality assessment conducted for the Airside Project addressed the cumulative impacts associated with all airport-related sources of air emissions at Logan, including aircraft, ground service vehicles, fuel facilities, and on-and off-airport motor vehicles. The same passenger levels developed in support of the *1994/1995 GEIR*, the *1996*, *1997* and *1998 Annual Updates*, and the *1999 Environmental Status and Planning Report*, air quality analyses (29 million passengers in 1999 and 37.5 million passengers in 2010 (2015)) formed the basis for the Airside Project assessment.[8] Similarly, on- and off-airport motor vehicle traffic data were the same for both studies. In this way, the air quality impacts associated with the

7 *Final Supplemental Environmental Impact Report (FSEIR)*, Massachusetts Department of Public Works, November 1990.

8 Massport has reviewed its previous planning forecasts, and regional and national aviation developments, and has adopted a new long-term forecast for when annual air passengers are expected to reach 37.5 million, now anticipated to be the 2015-planning horizon. The *1999 ESPR* and subsequent EDRs no longer evaluate the 2010 analysis year but will analyze the environmental effects of Logan Airport accommodating 37.5 million annual air passengers. All evaluations are based on passenger levels and therefore cumulative assessments remain consistent.

Airside Project alternatives were evaluated as part of the long-range development plan for Logan, and were not assessed independently as a separate component. This approach therefore assessed cumulative air quality and odor impacts associated with all landside and airside projects at Logan.

To completely assess cumulative air quality impacts, both emission inventories and dispersion modeling of existing and future year conditions were undertaken (see Sections 5.4 and 6.4 for a detailed discussion of the air quality modeling and assessment). The purpose of this assessment was twofold: (1) to compare the results to regulatory standards or criteria, and (2) to compare the impacts from the Preferred Alternative to the No Action Alternative.

The results of the emission inventories and dispersion modeling indicate that:

- There are no predicted violations of any federal and state standards or guidelines under any future scenarios or alternatives; and

- Due to improved airfield operating efficiency and reduced delay, the overall air quality impacts associated with the Preferred Alternative are beneficial or will remain imperceptible, when compared to the No Action Alternative.

- Air quality emissions associated with motor vehicles are the same for all Airside Project alternatives, including the No Action Alternative.

A comparison of the air quality impacts from the Airside Project to other past, present, and reasonably foreseeable projects is presented in Table 7.4-1. Each of the individual projects (Airside Project, West Garage, International Gateway, Jet Fuel Storage and Distribution Facilities Central Artery, AITC, and Terminal A Replacement), result in air quality improvements or, in the case of the Replacement Hilton Hotel, minor, imperceptible changes in air quality. Therefore, there are no cumulative air quality impacts associated with these projects.

The Terminal B, Pier A/Satellite FIS Facility improvements proposed by American Airlines and Massport are undergoing appropriate MEPA/NEPA review. Because the project itself will not induce change in the number of motor vehicles, aircraft, or support equipment, no additional emissions from these sources will be created as a result of the Terminal B, Pier A/Satellite FIS Facility. Furthermore, because the project will result in greater operating efficiency and less congestion on both the airside and the landside, emissions for the aforesaid mobile sources likely will decrease. In addition, gates will be fitted with provisions for electricity and pre-conditioned air, thereby reducing emissions from aircraft auxiliary power units.

Table 7.4-1
Cumulative Air Quality - Year 2010 (Emissions in kg/day)

	Comparison of Action minus No Action Alternatives Emissions		
	VOC	**NOx**	**CO**
Airside - 2010 45M High[8]	**-234**	**-201**	**-1,307**
Other Projects			
West Garage[1]	-11	-5	-61
International Gateway[2]	-22	-278	-82
Jet Fuel Storage[3]	-7.7	-10.4	0.0
Replacement Hilton Hotel[4]	n/a	n/a	n/a
Central Artery[5]	n/a	-91	-5,836
AITC[6]	-3	-6	-20
Terminal A Replacement[7]	-42	-201	-1,307
Subtotal Other Projects	-86	-591	-7,306

1 Final Environmental Impact Report, *West Garage Project*, Boston-Logan International Airport, January 31, 1996. (Includes Motor Vehicle Emissions only).

2 Final Environmental Impact Report and Environmental Assessment, *International Gateway*, Boston-Logan International Airport, October 15, 1996. (Based on 45 million passenger conditions and includes aircraft, auxiliary power units, and ground service vehicles.)

3 Final Environment Impact Report, *Jet Fuel Storage Facility*, Boston-Logan International Airport, April 16, 1996. (Includes Jet Fuel Storage Facility Emissions only.)

4 Environmental Notification Form, *Replacement Hilton Hotel*, Logan Airport, May 15, 1996. A waiver for the preparation of an Environmental Impact Report was granted by MEPA in July 1996. The Replacement Hilton Hotel will generate approximately 260 more trips per day than the existing hotel. The increase in emissions due to these new trips represents less than one percent of total airport traffic and is not considered an impact.

5 Final Environmental Impact Report, Central Artery (I-93)/Tunnel (I-90) Project, November 1990.

6 Environmental Assessment, Airport Intermodal Transit Connector. Boston-Logan International Airport, January 1998.

7 Terminal A Replacement Project, Federal Environmental Assessment, May 31, 2000.

8 Logan Airside Project Draft EIS/EIR scenario reflects the Preferred Alternative and includes all emission sources. 45M High scenario used to provide a consistent comparison to the International Gateway Project that used a 45M High scenario is the basis for the air quality analysis.

The results of the air quality impact analysis indicate that the total emissions caused by any of the Airside Project alternatives are below all applicable emission levels (under 40 CFR s.93.153 (b)) that would trigger the requirement for a conformity determination. The Airside Project is presumed to conform with Section 176(c) of the Clean Air Act with regards to the State Implementation Plan (SIP). This conclusion was reached because the Preferred Alternative is shown to result in a net reduction in future year emissions when compared to the No Action Alternative condition and therefore conforms to the SIP. This benefit is largely attributable to improved airfield efficiency with the proposed improvements. Atmospheric dispersion modeling conducted in conjunction with this analysis also shows that the proposed Airside Project will not cause, nor contribute to, violations of the National Ambient Air Quality Standard (NAAQS) for carbon monoxide (CO), ozone (O_3) or any other EPA-criteria air pollutant. Because emissions are reduced, the Preferred Alternative produces air quality benefits when compared to the No Action Alternative. There are no air quality impacts associated with the Airside Project, and consequently the project does not result in cumulative air quality impacts.

7.5 Construction Impacts and Coordination with Concurrent Major Projects

The cumulative construction impact analyses presented in this Airside Supplemental DEIS/FEIR considers each project impact added to the same kind of impact from other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Reasonably foreseeable future projects include other planned and developed activities in the affected area, which overlap in time and space and therefore could produce cumulative impacts.

Construction period impacts are generally temporary and of lesser magnitude than long-term impacts. The cumulative construction impacts are not anticipated to be significant due to mitigation programs that will reduce any construction period impacts. (See Section 6.9 for a discussion of construction mitigation.)

7.5.1 Construction Impacts from the Logan Project Improvements and Other Actions

As previously described in Section 6.9, the Airside Project is expected to result in local area impacts during the construction period, which is expected to begin in the spring of 2003 and extend on a phased basis through the Fall of 2007. As illustrated in Figure 7.5 -1, a number of other projects by Massport and other public and private entities are expected to be under construction concurrently with the Airside Project improvements.

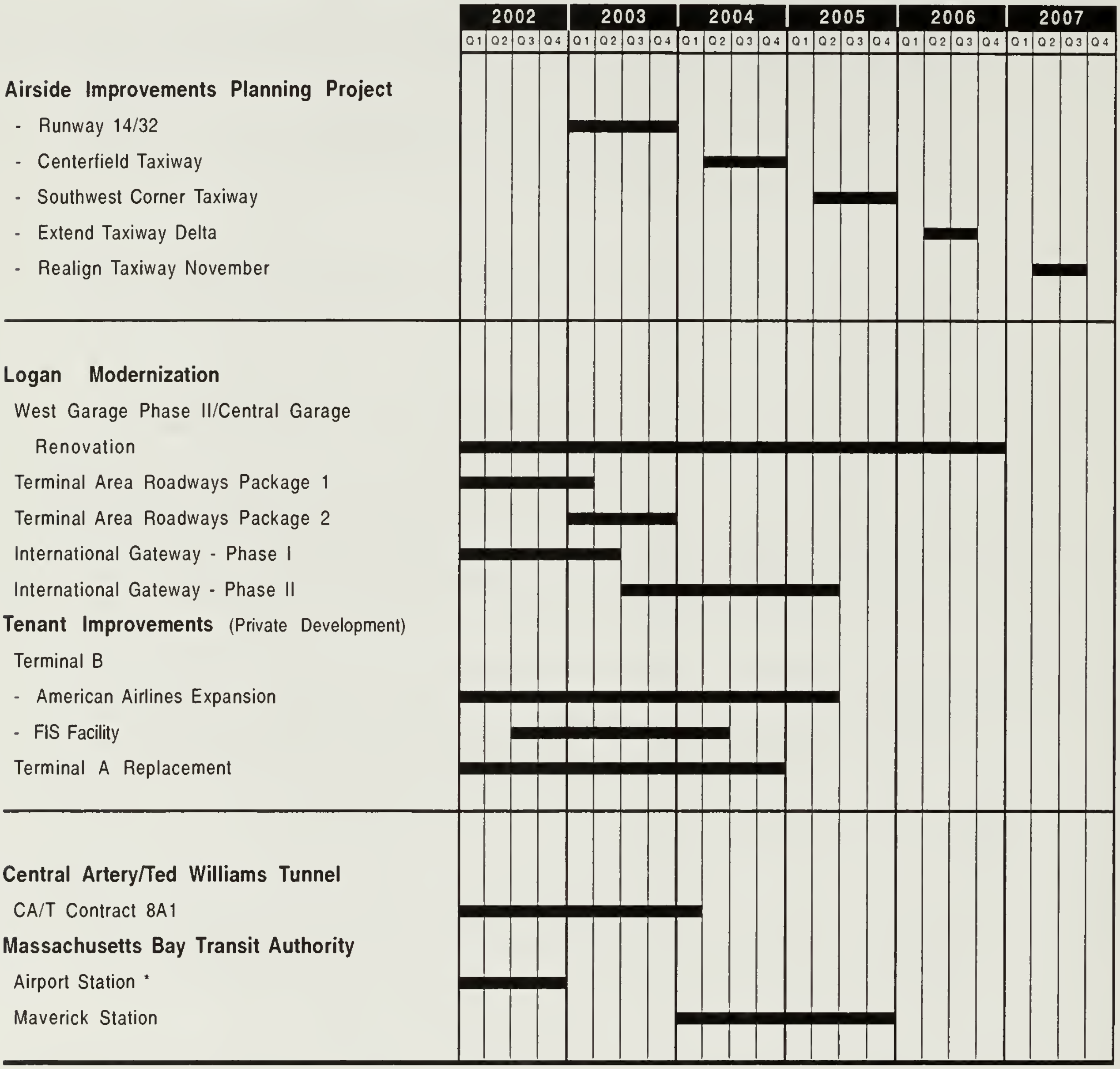
The cumulative construction impact analysis for the Airside Project builds upon a similar analysis conducted for the International Gateway project.[9] It provides a reasonable basis upon which to evaluate the construction impacts of the Airside Project Preferred Alternative together with those of other projects, as summarized in the following sections.

7.5.1.1 Construction Traffic

Construction-related vehicle (trucks and other heavy equipment) trips will occur on Logan roadways during construction of the Airside Project and other major on-going projects. Construction of the Preferred Alternative for the Airside Project is estimated to average about 56 daily round-trip truck trips in a given quarter, with a peak period of 92 daily round-trip truck trips occurring during the 2004 construction season.

The combination of the Airside Project improvements with the other concurrent projects during the 2003 to 2007 construction period will generate daily round trip truck trips of approximately 364 per day during the peak calendar quarter. The peak cumulative construction traffic occurs the first quarter of 2003, mostly as a result of concurrent CA/T construction on the airport. Truck traffic associated with construction drops off significantly after 2004 as CA/T construction on the airport is completed. Table 7.5-1 compares the cumulative truck trips associated with the Airside Project with the construction truck trips of all other major concurrent projects. By 2007, all construction truck traffic is expected to be generated by the Airside Project.

9 *Boston-Logan International Airport - International Gateway Draft EIS/EA* prepared for the Massachusetts Port Authority and the Federal Aviation Administration by Jason M. Cortell and Associates, Inc. March 29, 1996.



*To be constructed as part of CA/T Contract 8A1

Revised 2/6/01

Figure 7.5-1
Construction Schedule Including Concurrent Projects

Table 7.5-1
Average Cumulative Daily Truck Round Trips Per Quarter

Year/Quarter	Other Concurrent On-airport Projects	Preferred Alternative	Total
2003 / 1st Quarter	303	61	364
2003 / 2nd Quarter	174	61	235
2003 / 3rd Quarter	150	61	211
2003 / 4th Quarter	172	61	233
2004 / 1st Quarter	161	---	161
2004 / 2nd Quarter	156	92	248
2004 / 3rd Quarter	151	92	243
2004 / 4th Quarter	162	92	254
2005 / 1st Quarter	85	---	85
2005 / 2nd Quarter	81	18	99
2005 / 3rd Quarter	72	18	90
2005 / 4th Quarter	72	18	90
2006 / 1st Quarter	72	---	72
2006 / 2nd Quarter	72	47	119
2006 / 3rd Quarter	66	47	113
2006 / 4th Quarter	66	---	54
2007 / 1st Quarter	54	---	0
2007 / 2nd Quarter	0	56	56
2007 / 3rd Quarter	0	56	56
2007/ 4th Quarter	0	---	0

Note: Other concurrent on-airport projects include the terminal area roadways, CA/T Project Contract 8A1, International Gateway, West Garage Phase II, Terminal B improvements and replacement of Terminal A. See Figure 7.5-1 for Project Construction Schedule.

7.5.1.2 Construction Workers

Construction of proposed Runway 14/32 and the taxiway improvements under the Airside Project would be similar to highway construction projects and is not labor intensive. As many as 50 to 75 people could be working on the Airside Project construction at any one time. On average, it is estimated that 15 to 20 workers would be on-site during a typical shift. This is not a significant addition to the estimated average of 240 workers expected daily during the concurrent International Gateway, terminal area roadways, and CA/T Project construction. By comparison, an average of 15,000 non-construction employees work at Logan on a daily basis.

While some of the construction workers may come from the nearby communities, the market for construction employees is regional. Prohibition of on-site construction worker parking will mean far fewer vehicle trips. Workers are expected to commute to and from the site by using public transportation or high occupancy vehicles (HOVs) such as shuttles or buses. Under Massport's construction period mitigation program, construction workers commuting will be subject to a contractually-required transportation management plan.

7.5.1.3 Construction Air Quality

An emission inventory of construction-related air emissions has been conducted for the Logan Airside projects and presented in Section 6.9.4.2. The purpose of this inventory is to identify and quantify the sources of emissions and measure their relative impacts. This is done by comparing these emission levels to the appropriate Clean Air Act Section 176(c) *de minimis* levels.

This inventory was developed using the EPA models NONROAD (draft) and MOBILE5a_H, with appropriate input provided by the Massachusetts Department of Environmental Protection (DEP). The following site-specific information was used in this analysis: the type of construction equipment and vehicles, usage factors, vehicle trips and mileage, and construction phasing. National data were used for engine horsepower and loading factors, fuel types, and emission factors. The activity levels (hours per year) and emissions associated with each equipment type are contained in Appendix J.

Standard dust-suppression measures, such as the ongoing application of water spray at all Logan construction sites, will be implemented for the Airside Project as well as all other concurrent Massport construction projects. Given the distance between the project site and other land uses off-airport, these measures should minimize cumulative dust impacts on the surrounding communities. There will be no burning of construction debris at any Logan project site. Similar construction measures are in place for the CA/T Project construction, along with a well-developed mechanism of community consultation to manage CA/T Project impacts.

Additional PM_{10} (particulate matter) emissions may occur during the construction period of the foreseeable actions; however, no violation of the PM_{10} standard is expected, given the low levels experienced historically in the vicinity of Logan. The reported 1998 PM_{10} readings at DEP's Bremen Street (East Boston) monitoring location most likely reflect the considerable ongoing construction in the area by Massport and MassHighway, as well as

new Ted Williams Tunnel traffic. In 1998, the second maximum 24-hour PM_{10} value for this site was 48 $\mu g/m^3$, well below the standard of 150 $\mu g/m^3$. In addition, the monitoring data show a downward trend over the past eight years.[10]

As reported in Section 6.9.4.2 and shown in Table 6.9.4.2-1, emissions associated with airside construction projects are well below the levels of the general conformity regulations. Construction emissions are thus presumed to conform with Section 176(c) of the CAA. In addition, Massport is committed to participating in the Massachusetts Clean Air Construction Initiative[11] that would further reduce emissions below the *de minimis* thresholds by use of catalysts and filters with construction equipment. Therefore the construction air emissions when added to emissions of other past, present and reasonably foreseeable projects are not significant. There are no NAAQS violations.

7.5.1.4 Construction Noise

The cumulative noise impacts of concern during construction are generally those caused by equipment operating on site and truck trips to and from the site.

The cumulative construction noise analysis considered the potential noise impact from the construction of the proposed Airside Project improvements and concurrent construction projects at Logan Airport on the closest noise-sensitive areas to the construction zone. Concurrent projects are expected to include the terminal area roadways, International Gateway, and CA/T contract, C08A1. This analysis built upon the cumulative construction noise analysis presented in the Final EIR/EA for the International Gateway (adjusted to reflect current construction schedules) the Replacement Terminal A Draft EIR,[12] and incorporated the results of the construction noise analysis developed for the Airside Project as presented in Section 6.9.

The location of the community noise receptors for the construction noise analysis for the concurrent projects analyzed in the International Gateway EIR/EA reflect the fact that these projects are located within the terminal area of Logan. Construction noise impacts therefore were computed for three representative locations in Jeffries Point (the Jeffries Point Yacht Club, and residences on Maverick Street and in McCormack Square), the East Boston Memorial Stadium Park and a residence on Coleridge Street in Harborview, all in East Boston. The Airside Project improvements construction noise analysis reflects the fact that construction would occur on the airfield. In addition to locations in Jeffries Point (Jeffries Point Yacht Club and Sumner Street near Lamson) and Harborview (Coleridge Street residence), representative locations considered in the Airside Project construction noise analysis included two in Winthrop (Somerset and Johnson, and Loring Road near Court), two in the Bayswater section of East Boston (East Boston Yacht Club and at Bayswater and Shawsheen Streets), and one in South Boston (Farragut Road at Second). Predictions of average daily equivalent (Leq) cumulative noise levels were made for the three sites that were previously analyzed in the International Gateway EIR/EA, as well as

▼

10 *1997 Air Quality Report*, Commonwealth of Massachusetts, Department of Environmental Protection.

11 The goal of the Clean Air Construction Initiative (CACI) is to reduce the emissions associated with construction equipment.

12 Replacement Terminal A Draft EIR, Delta Airlines, October 15, 2000.

in the Airside Project Draft EIR/EIS. Additional information on construction noise was presented in the Replacement Terminal A EA/Draft EIR. This is presented in Table 7.5-2.

The results of the construction noise analysis indicate that the cumulative construction noise at all three sites is less than the ambient noise level, which is dominated by the noise from aircraft operations. The increase in noise levels over the ambient noise level as a result of the construction of the Airside Project improvements and the other concurrent construction projects ranges from 0 decibels to 2.1 decibels. According to the Federal Highway Administration (FHWA) noise criteria, increases of less than 5 dBA are categorized as "no impact."

The Supplemental DEIS/FEIR analysis shows that the Airside Project, in addition to the other Massport and private development projects, will have no noise impacts cumulatively, using the FHWA criteria. The routing of construction-related traffic onto designated haul routes in non-residential areas, as required by Massport, also addresses concerns about noise from construction truck traffic. This conclusion is supported by the fact that Massport has received no construction noise complaints over the past two years of combined Logan Modernization and CA/T Project construction.

7.5.1.5 Other Construction Issues

Construction excavate will be managed at all Logan construction sites in accordance with the provisions of the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000) if contaminant threshold levels are triggered. Depending on the level of contaminants, if any, and its suitability for reuse, excavated soil will either be disposed of or recycled at an approved off-site facility. Soil tracking protocols will be implemented from the point of excavation to the designated disposal area. There will be no borrow pits at any airport construction site.

Massport has developed a dewatering and discharge plan for all airport construction projects that provides for treatment and management of contaminated groundwater associated with dewatering activities, a quality assurance program for all dewatering activities, and for needed regulatory submittals for stormwater discharges during construction. Appropriate controls will be used throughout the construction period to ensure that excavation, staging, and demolition activities do not introduce sediment, contaminated water, or construction debris into the groundwater or storm drain system. Where applicable, a general National Pollution Discharge Elimination System (NPDES) permit for construction activities will be incorporated into the construction plans, specifications, and contract of each Logan project.

Massport will implement its construction period mitigation program as generally described in Section 6.7, and continue to refine, adjust and apply that program during construction of the Airside Project in order to minimize potential noise, air and traffic impacts on the nearby East Boston community. Comprehensive environmental monitoring and implementation of necessary mitigation measures will ensure that construction impacts of the Airside Project, in combination with other past, present and proposed projects, are not significant.

Table 7.5-2
Cumulative Construction Noise - Average Daily Equivalent (Leq) In Decibels

		2003				2004				2005				2006				2007			
Receptor	**Activity**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
C	International Gateway	41.0	34.0																		
(E in International	West Garage & Roads	40.0	34.0	33.0	28.0																
Gateway EIR)																					
	CA/T Contract C8A1	42.0	40.0	38.0	36.0	29.0															
Coleridge Street,	**Total Other Projects**	45.8	41.8	39.2	36.6	29.0															
East Boston	**Airside All Projects**	51.4	51.0	52.5	51.0		58.4	59.0	55.8			46.7	46.7		51.7	48.4			55.6	55.3	
	Total Construction	52.5	51.5	52.7	51.2	29.0	58.4	59.0	55.8			46.7	46.7		51.7	48.4			55.6	55.3	
	Ambient	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5
	Total with Ambient	66.7	66.6	66.7	66.6	66.5	67.1	67.2	66.9	66.5	66.5	66.5	66.5	66.5	66.6	66.6	66.5	66.5	66.8	66.8	66.5
A	International Gateway	39.0	32.0																		
(Near receptor B in	West Garage & Roads	50.0	45.0	44.0	39.0																
International Gateway																					
EIR)																					
	CA/T Contract C8A1	44.0	42.0	40.0	38.0	30.0															
Sumner near	**Total Other Projects**	51.2	46.9	45.5	41.5	30.0															
Lamson,	**Airside All Projects**	55.9	55.5	57.0	55.5		53.1	53.8	50.6			46.2	46.2		47.7	44.9			46.6	46.4	
East Boston	**Total Construction**	57.2	56.1	57.3	55.7		53.1	53.8	50.6			46.2	46.2		47.7	44.9			46.6	46.4	
	Ambient	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2
	Total with Ambient	61.3	60.9	61.4	60.8	59.2	60.2	60.3	59.8	59.2	59.2	59.4	59.4	59.2	59.5	59.4	59.2	59.2	59.4	59.4	59.2
14	International Gateway	45.0	38.0																		
(A in International	West Garage & Roads	50.0	45.0	44.0	40.0																
Gateway EIR)																					
	CA/T Contract C8A1	42.0	41.0	39.0	37.0	29.0															
	Terminal A	63.0	63.0	63.0	65.0	61.0	61.0	61.0	61.0												
Jeffries Point	**Total Other Projects**	63.3	63.1	63.1	65.0	61.0	61.0	61.0	61.0												
	Airside All Projects	57.9	57.4	58.9	57.5		53.2	53.8	50.6			44.0	44.0		43.2	43.1			45.5	45.2	
	Total Construction	64.4	64.1	64.5	65.7	61.0	61.7	61.8	61.4			44.0	44.0		43.2	43.1			45.5	45.2	
	Ambient	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0
	Total with Ambient	70.3	70.2	70.3	70.7	69.6	69.7	69.8	69.7	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0

8 Preferred Alternative and Mitigation

Key Points

This Chapter summarizes the principal findings from the relevant analyses presented in the Airside Improvements Planning Project Draft Environmental Impact Statement/ Environmental Impact Report (Airside Project Draft EIS/EIR) and this Supplemental Draft EIS/Final EIR (Supplemental DEIS/FEIR) and the basis for the selection of the Preferred Alternative. Chapter 8 also presents Massport's and FAA's proposed mitigation program. The Executive Office of Environmental Affairs (EOEA) May 7, 1999 Certificate required Massport to commit to a number of "concrete mitigation measures ... that will maintain or reduce the existing envelope of cumulative environmental impacts from airport operations." Specific measures identified by the Secretary are addressed in this Chapter, as well as, Massport's mitigation commitments for project related impacts, which are set out in Section 8.7, Proposed Section 61 Findings.

- Massport selected Alternative 1A (which includes all actions except Peak Period Pricing) as the Preferred Alternative because it will provide significant delay reduction benefits through measures that will also provide certain environmental benefits. The environmental impacts that will result from the Preferred Alternative will be mitigated. The taxiway improvement concepts will also improve airfield safety and efficiency. Additionally, delay reductions are achieved without imposing the economic costs on regional carriers and small communities that are associated with Alternative 1, which includes Peak Period Pricing.

- The operational analysis indicates the following about the Preferred Alternative:

  - A unidirectional Runway 14/32 produces significant delay reduction benefits under all future forecast scenarios, as well as under current activity levels.

  - Greater use of regional transportation options, such as regional airports and high speed rail, provides a benefit by accommodating a greater share of the region's intercity travel demand. However, regional transportation options do not eliminate the principal cause of delays at Logan, i.e., the lack of a third available runway during northwest wind conditions.

  - The Taxiway Improvements, and most importantly the addition of the Centerfield Taxiway, contribute to delay reduction across all future forecast scenarios. In addition, the taxiway improvements will enhance safety and reduce

the potential for runway incursions and wingtip conflicts, while simplifying the taxiway layout and reducing congestion.

- Reducing approach minimums on runways 15R, 22L, 27 and 33L will provide delay reduction and safety enhancement benefits by increasing runway availability in Instrument Flight Rules (IFR) weather.

- The current and projected near-term hourly demand profile and level of aircraft operations at Logan, which are consistent with 29M Low Fleet conditions, do not support implementation of Peak Period Pricing. In the 29M Low Fleet scenario, Peak Period Pricing is not an effective delay reduction tool because airline overscheduling does not significantly contribute to Logan delays in these conditions. It produces only minimal delay reduction in Low Fleet conditions, while imposing costs on certain regional carriers and New England communities that depend on Logan for air service. An appropriate Peak Period Monitoring System will allow Massport to identify conditions when airline overscheduling could come into effect and to take timely remedial action.

- If Runway 14/32 had been available for use in 1998, total delays would have been reduced by 32 percent. Delays in Visual Flight Rules (VFR) conditions would have been reduced by 69 percent and delays during northwest wind conditions would have been reduced by nearly 90 percent.

- The environmental analysis indicates the following:

  - The Preferred Alternative provides flexibility in runway selection and hence a greater opportunity to achieve Preferential Runway Advisory System (PRAS) long-term and short-term noise goals. With unidirectional Runway 14/32 in place, the opportunity to achieve long-term PRAS goals nearly doubles for all fleet scenarios compared to the No Action Alternative.

  - Consistent with improved PRAS achievement, the Preferred Alternative reduces the population exposed to day-night sound levels (DNL) greater than or equal to 70 dB. The trade-off for reducing populations exposed to the highest noise levels is an increase in the number of people located within the 65 to 70 dB DNL contour. Residential sound insulation will be provided to mitigate this impact, to the extent that federal funding is available.

  - Regardless of the forecast activity scenarios, without Runway 14/32 noise for the most severely affected populations will substantially worsen over time. Runway 14/32 provides a unique opportunity to reduce the number of people subjected to the highest noise impacts.

  - In addition to reducing noise exposure at the highest DNL levels, the Preferred Alternative allows for a more balanced geographic distribution of jet operations. Under the 37.5M High scenario, the Preferred Alternative results in 41 percent of jets utilizing runways affecting communities north and south of the airport,

compared to 91 percent for the No Action Alternative. Conversely, the percentage of jets flying over water increases significantly from 6 percent in the No Action Alternative to 30 percent with the Preferred Alternative.

- Runway 14/32 and the Taxiway Improvements significantly reduce ground noise impacts for communities most affected by ground taxi noise.
- The Preferred Alternative provides air quality benefits, when compared to the No Action Alternative, by reducing aircraft delays.
- The Preferred Alternative has been reviewed in accordance with the Federal Executive Order 12898 and the applicable US DOT Order. After taking into account mitigation measures, the Preferred Alternative will not result in a disproportionate impact to minority and/or low-income populations.
- No impacts to wetlands will result from the construction of Runway 14/32 or the Taxiway Improvements.
- No long-term impacts on water quality will result from Runway 14/32 or the Taxiway Improvements.
- Construction of the Centerfield Taxiway and Taxiway Delta will alter portions of grassland that serve as a habitat for the state-listed endangered upland sandpiper. The Massachusetts Natural Heritage and Endangered Species Program (NHESP) issued draft permit conditions to Massport that will be used to develop a mitigation plan to address this impact.
- The Preferred Alternative will not incorporate land from a Section 4(f) resource. In addition, neither proposed sound insulation activities nor mitigation will affect the normal activity or aesthetic value of any public park, refuge, or historic site.
- All short-term construction impacts can and will be mitigated.

- The project-specific mitigation program addresses all potential adverse environmental impacts associated with the Preferred Alternative:
  - Runway 14/32 will be designed, constructed and at the request of Massport be operated by the FAA to handle only over-water operations (i.e., unidirectional use). Massport will light, mark and instrument the runway to reflect non-use of Runway 32 for departures and non-use of Runway 14 for arrivals. As a further reinforcement of the unidirectional restriction, Massport will construct only a parallel taxiway on the 14 end to accommodate over-water departures.
  - To the extent that federal funding is provided, the proposed sound insulation program will include all residences newly included within the Preferred Alternative's 65 dB DNL contour when compared to the No Action 65 dB DNL contour for the 29M Low Fleet scenario. Furthermore, Massport and the FAA will continue to sound insulate eligible residences through the current 2-year sound

insulation program as presented in the *Logan Airport 1999 Environmental Status and Planning Report.*[1]

- Relocation assistance will be provided to eligible tenants of Building 60.
- The potential loss of upland sandpiper habitat will be mitigated by enhancing off-site habitat, altering airfield mowing procedures, and implementing an on-airfield reconnaissance program.
- During the construction period, an extensive array of traffic, water quality, air quality and noise mitigation measures will be employed to mitigate temporary construction impacts.

Since the publication of the Airside Project Draft EIS/EIR, Massport has developed certain additional mitigation commitments including:

- A PRAS Monitoring System designed to gather data and report on the actual achievement of PRAS. The objective of this system is to enhance the attainment of the PRAS goals and provide a broader platform for disclosure of the monitoring results.
- A Peak Period Monitoring System to determine when airline overscheduling becomes a significant contributor to delays.
- A Peak Period Pricing exemption program that will reduce the expected degree of service disruption to eligible New England communities, without undermining the Program's delay reduction benefits.
- Steps to be taken by Massport, in cooperation with other state transportation agencies, to ensure that the Worcester, Manchester and T.F. Green Airports operate jointly with Logan Airport as the key elements in an efficient and environmentally balanced regional air transportation network.
- While not related to Airside Project impacts, Massport will continue discussions with air carriers with t he goal of reducing the use of hushkitted Stage 3 aircraft at Logan.

1 *The Logan Airport 1999 Environmental Status and Planning Report*, prepared for Massport by Vanasse Hangen Brustlin, Inc., October 15, 2000

8.1 Introduction

The Airside Project is intended to reduce current and projected levels of aircraft delay and enhance operational safety at Logan. A range of improvement concepts to accomplish these objectives was evaluated in the Airside Project Draft EIS/EIR and a comparative analysis was conducted from both an operational and environmental perspective.

The proposed improvement concepts include:

- Construction of a unidirectional Runway 14/32;
- Construction of a Centerfield Taxiway;
- Extension of Taxiway Delta;
- Realignment of Taxiway November;
- Optimization of taxiways in the southwest corner of the airfield;
- Reduction in approach minimums on Runways 22L, 27, 15R, and 33L; and
- Peak Period Pricing.

The analytical framework for assessing these concepts was structured to provide a comprehensive assessment of alternative packages as shown in Table 8.1-1.

Table 8.1-1
Logan Airside Project improvements Alternative Packages

	Alternative 1	Alternative 1A	Alternative 2	Alternative 3	Alternative 4
	All Actions	All Actions Except Peak Period Pricing	All Actions Except Runway 14/32	No Build	
Improvement Concept		PREFERRED ALTERNATIVE			NO ACTION ALTERNATIVE
Runway 14/32	■	■			
Taxiways:					
Centerfield	■	■	■		
Extend Delta	■	■	■		
Realign November	■	■	■		
South West Corner Optimization	■	■	■		
Operational:					
Reduced Minimums	■	■	■	■	
Peak Period Pricing	■		■	■	

The comparative benefits and impacts of the different alternatives were fully described in Chapters 4, 6, and 8 of the Airside Project Draft EIS/EIR. After careful review in the Airside Project Draft EIS/EIR of the extent and causes of delays at Logan and the results of each Alternative's comparative benefits, Alternative 1A was selected as the Preferred Alternative because:

- It significantly reduces the current level of delay and delay for all future scenarios without imposing the economic costs associated with Peak Period Pricing on regional carriers and the communities they serve.

- By reducing delays, it achieves certain environmental benefits that include improved air quality and a reduction of noise for the most severely impacted communities, while causing minimal environmental impacts, all of which will be mitigated.

This chapter presents a summary of the benefits and impacts of the Preferred Alternative, compares these results to the consequences of doing nothing (No Action Alternative), and summarizes the Airside Project mitigation and permitting requirements.

8.2 Preferred Alternative

The analysis in the Airside Project Draft EIS/EIR provided the analytical context for the selection of Alternative 1A as the Preferred Alternative for reducing current and projected levels of aircraft delay and enhancing operational safety at Logan. The Preferred Alternative achieves significant delay reduction and safety benefits under all future forecast scenarios, reducing total annual delays by 27 to 31 percent and VFR runway delays by 48 to 56 percent when compared to the No Action Alternative. Implementation of the Preferred Alternative will allow Massport to increase the operational efficiency and safety of the airfield, reduce existing delay, and accommodate the expected future growth in aviation activity that is vital to the regional economy.

By improving airside operating conditions and reducing the amount of time aircraft are delayed in the air or on the ground, the Preferred Alternative reduces the environmental impact of aircraft operations. This alternative will result in improved air quality over No Action conditions, an increase in the number of aircraft operations on over–water flight paths, a greater ability to meet PRAS noise goals, and reduced noise impacts for the most severely affected populations in East Boston, Revere and Winthrop. With the construction, environmental and sound insulation mitigation proposed by Massport, the short-term and long-term environmental impacts associated with the Preferred Alternative will be mitigated.

The Preferred Alternative, Alternative 1A, consists of the following improvements:

Unidirectional Runway 14/32

A new 5,000-foot unidirectional runway will be constructed along the southwestern edge of the airport. The Runway 14/32 layout will be designed by Massport and operated by the FAA only as a unidirectional runway. All arrivals will occur over Boston Harbor to the Runway 32 approach end and all departures will occur from the Runway 14 end and head out over the harbor. Unidirectional Runway 14/32 addresses the principal cause of delay at Logan – the substantial drop in capacity that occurs when moderate to strong northwest/southeast winds force the airport to operate with fewer than three runways – by providing a second effective parallel runway in the northwest/southeast orientation. In calm winds, availability of another three-runway configuration that includes unidirectional Runway 14/32, would also provide the FAA with greater flexibility to shift operations away from Runways 4L/22R and 4R/22L and increase the number of operations over the water. This would allow for a more equitable distribution of operations consistent with the PRAS noise abatement goals, and provide relief to noise-affected communities to the north and south of the Airport. Construction of the unidirectional runway is estimated to take approximately one year, and would begin after the receipt of all necessary federal and state approvals.

Centerfield Taxiway

A 9,300-foot taxiway will be constructed between Runways 4L/22R and 4R/22L. The Centerfield Taxiway will: (1) reduce taxiway congestion, thereby enhancing the general safety of airside operations; and (2) facilitate more efficient movement of aircraft between terminal areas and runways during takeoff and landing procedures, thereby reducing delays, ground noise and air emissions.

Other Taxiway Improvements

Taxiway crossings and ground taxiing movements will be improved to enhance airfield safety and operating efficiencies by:

- Reconfiguring the Southwest Corner Taxiway System to streamline taxiway flow in a very complex area for ground operations. The taxiway reconfiguration would improve access in the areas of runway ends 9, 4L and 4R, and several of the surrounding taxiways by isolating the lines of traffic flow from each other.

- Extend Taxiway Delta to Runway 4R/22L by constructing an additional 2,000 feet of taxiway between Runway 33L and Runway 4R.

- Realign Taxiway November between Runway 15L/33R and Runway 33L/15R and eliminate Taxiway Tango. The realignment would also change the location of the intersection with Taxiways Alpha and Kilo by removing the intersection after the curve to simplify the crossing of these taxiways.

Operational Improvements

The proposed action will reduce the approach minimums on Runways 22L and 27 to ILS Category I values and on Runways 15R and 33L to ILS Category III values, consistent with the capabilities of the existing and planned navigational equipment. Implementation of reduced minimums is solely within the FAA's jurisdiction.

Peak Period Pricing is not included in the Preferred Alternative because airline over-scheduling is not currently a problem at Logan. Further, the delay reduction benefits associated with Peak Period Pricing come at a cost to passengers, communities and the air carriers. If airline overscheduling becomes a significant contributor to Logan delays in the future, Massport recognizes the benefits of Peak Period Pricing and will implement an appropriate program at that time. Chapter 4 of this document describes the Peak Period Monitoring System designed by Massport to determine when delays due to overscheduling are severe enough that a peak period pricing program would be appropriate. The commitment to initiate and maintain the Peak Period Monitoring System is a specific project mitigation measure.

Table 8.4-1
Summary of Preferred Alternative by Construction Elements

Construction Element	Construction Cost Estimate[3] ($ millions)	Estimated Construction Period (Days[1])
Unidirectional Runway 14/32	$33	300
Centerfield Taxiway	$20	See Note 2
Southwest Taxiway System Reconfiguration	$14	240
Taxiway Delta Extension	$6	180
November Taxiway Realignment	$3	180
Total	$76	Phased over ± 5 years

1 Days are consecutive calendar days, inclusive of Saturdays and Sundays. Does not include winter construction shut down period.
2 Construction of the northern segment of Centerfield Taxiway is estimated to take 180 days; construction of the southern segment Centerfield Taxiway is estimated to take 210 days. There is some overlap of the two construction periods.
3 Costs are for construction only and exclude mitigation costs.

8.3 Summary of Delay Reduction Benefits

The FAA's and US DOT's current and historic delay statistics confirm that Logan Airport is unable to accommodate existing demand levels without incurring significant levels of delay. As demand continues to grow, airfield congestion and delays at Logan will worsen if effective measures for dealing with increased demand are not implemented.

An evaluation of the No Action Alternative illustrates the consequences of doing nothing:

- If no actions are taken, Logan's annual runway and taxiway delays will increase from 142,000 hours in 1998 to as much as 363,000 hours in the 37.5M High Fleet scenario.
- If no airfield improvements are made, the ability to improve PRAS goals will diminish over time. As demand increases, dependence on the north/south operation of the airport is projected to grow to nearly 90 percent.

While Massport cannot entirely eliminate delays at Logan, an evaluation of the Airside Project Alternatives indicates that the Preferred Alternative is an effective measure for reducing current delay, increasing operational efficiency and enhancing safety. Under the 29M Low Fleet scenario, which is most similar to current conditions at Logan, the Preferred Alternative reduces total annual delay (runway and taxiway) by 27 percent, or 46,100 hours. Unidirectional Runway 14/32 produces a consistent and significant delay reduction benefit under all future fleet scenarios, without imposing a disproportionate economic burden on regional carriers.

Runway 14/32 reduces annual delay primarily by reducing delays on days when moderate to strong northwest or southeast winds prevent air traffic controllers from using existing high capacity runway configurations. If Runway 14/32 had been available in 1998, delays would have been reduced by nearly 90 percent in northwest wind conditions.

While the level of taxiway delays at Logan is not as high as those delays associated with runway constraints, taxiway delays impede airfield efficiency, increase ground noise and increase air emissions. The airfield delay analysis indicates that taxiway improvements will provide substantial delay reduction and reduce the risk of runway incursions. While the taxiway improvements provide the greatest reduction in taxiway delays, the addition of unidirectional Runway 14/32 also contributes to taxiway delay savings by permitting a shift in runway usage patterns that allows the use of more efficient taxiway configurations.

The taxiway improvements, and most importantly the Centerfield Taxiway, contribute to delay reduction across all future forecast scenarios. The delay reduction hours attributable to the taxiway improvements in the 29M Low Fleet scenario are approximately 21,900 hours.

8.4 Summary of Environmental Impacts

The Airside Project Draft EIS/EIR presented a comprehensive analysis of environmental issues in response to the federal and state scoping documents. This section of the Supplemental DEIS/FEIR presents a summary of the results of the environmental analysis for the Preferred Alternative as compared to the No Action Alternative under future fleet scenarios.

8.4.1 Air Quality

There are no negative air quality impacts associated with the Preferred Alternative. When compared to the No Action Alternative, the Preferred Alternative provides air quality benefits. The Preferred Alternative is expected to generate lower amounts of total carbon monoxide (CO), oxides of nitrogen (NOx), volatile organic compounds (VOCs), odor-causing hydrocarbons, and PM_{10} emissions than the No Action Alternative. The results of the dispersion modeling analysis shows that the Preferred Alternative is expected to result in no violations of the National Ambient Air Quality Standards (NAAQS). This pattern is the same for all future fleet scenarios and is largely attributable to delay reductions in airside operations associated with the Preferred Alternative.

8.4.2 Noise

The Preferred Alternative provides for increased flexibility in runway selection. This leads to a more equitable distribution of noise impacts and a greater ability to meet PRAS noise abatement goals than the No Action Alternative. If the Preferred Alternative is implemented, achievement of the annual PRAS goals is expected to nearly double for all fleet scenarios. The delay modeling also shows that the Preferred Alternative produces similar results for all future scenarios for the short-term dwell (one day) and persistence (three-day) PRAS goals.

The ability of Runway 14/32 to increase the opportunity to better meet PRAS runway-use goals is also reflected in the area-wide cumulative noise exposure contours for in-flight noise and estimates of the number of people residing within those contours. The Preferred Alternative provides a substantial reduction in population exposed to day-night sound levels (DNL) greater than or equal to 70 dB. For future fleet scenarios, the reductions are significant, ranging from 70 to 81 percent for DNLs greater than or equal to 75 dB, and 39 to 43 percent for values of 70 dB or greater.

In addition to reducing noise exposure at the highest DNL levels, the Preferred Alternative allows for a more balanced geographic distribution of jet operations. Under the 37.5M High scenario, the Preferred Alternative results in 41 percent of jets utilizing runways affecting communities north and south of the airport, compared to 91 percent for the No Action Alternative. Conversely, the percentage of jets flying over water increases significantly from 6 percent in the No Action Alternative to 30 percent with the Preferred Alternative.

For both the Preferred Alternative and the No Action Alternative, the average changes in population within the 65 dB DNL contour are small. The population within the 65 dB DNL increases in Chelsea (by 244 people) and, to a lesser degree, in portions of East Boston (by 139 people) and South Boston - west of D Street (by 32 people), when compared to the No Action Alternative under the 29M Low Fleet scenario. These population increases result from increased use of Runways 15R/33L and Runway 27 departures, consistent with the PRAS runway use goals.

The analysis of ground taxi operations indicates that the noise from ground operations is significantly less than the noise from in-flight operations. The Preferred Alternative would, however, produce a significant reduction in ground taxi noise for communities located to the northeast of the airport (the Bayswater section of East Boston and the Court Road section of Winthrop), with smaller reductions at Jeffries Point.

8.5 Summary of Mitigation for the Preferred Alternative

This section presents a summary of the environmental and construction impacts associated with implementation of the Preferred Alternative and presents proposed measures to mitigate these impacts, where applicable. For this Supplemental DEIS/FEIR, the preliminary mitigation plan presented in the Airside Project Draft EIS/EIR is repeated, and the additional mitigation measures are presented. The project-specific and other mitigation commitments include:

- Project-Specific Mitigation measures are as follows:
  - **Reinforce Unidirectional Restriction** for Runway 14/32 operations.
  - **Sound Insulation Program** for those eligible residences located within the 65 dB DNL contour (29M Low Fleet). These areas include portions of Chelsea, East Boston and South Boston. For the eligible residences, the FAA will fund building code upgrades, to the extent necessary, to implement sound insulation improvements.
  - **Airport Tenant Relocation Assistance.** The only relocation required for construction of Runway 14/32 involves the tenants of Building 60 in the South Cargo Area. Massport will provide relocation assistance as required under applicable law to mitigate impacts.
  - **Upland Sandpiper Habitat Enhancement Plan** including: Alteration of existing airfield grassland mowing procedures to encourage the use of non-construction areas; implementation of a pre-construction and an on-going pre-mowing upland sandpiper reconnaissance program; and restoration of off-site habitat.
  - **Construction Mitigation** including Massport's required Construction Mitigation Program, and adherence by Massport and construction contractors to the Clean Air Construction Initiatives.

- Other Mitigation Commitments include the following:

  - **PRAS Monitoring and Reporting.** Massport is committed to more frequent and comprehensive PRAS monitoring and public reporting.
  - **Peak Period Monitoring Program.** Massport is proposing an airline schedule monitoring system, and is committed to implementing Peak Period Pricing if airline overscheduling emerges as a source of future delays.
  - **PRAS Nighttime Over-Water Preference Routing.** Massport will encourage the FAA to continue the practice of initiating over-water routing preferences as soon after 11:00 PM as practicable.
  - **Seek to Reduce Use of Hushkitted Aircraft at Logan.** Massport will continue to work with air carriers to encourage the use of full Part 36 (Stage 3) new technology aircraft.
  - **Regional Transportation Steps.** Massport supports the regionalization of New England's transportation network and continues to work with aviation transportation agencies including the FAA, the Massachusetts Aeronautics Commission (MAC), other New England State Aviation Directors, and the regional airports, to ensure the efficient use of the region's transportation infrastructure. Massport, along with the FAA and the regional airport directors, will conduct the *New England Airports System Study*. This study will evaluate the potential for international, charter, and cargo services at each of the regional airports; evaluate capacity issues at each of the regional airports; and consider the development of high occupancy vehicle/ground transportation and rail alternatives to improve access to the regional airports.

8.5.1 Project Specific Mitigation

The following section outlines the project specific mitigation proposed as a component of the Airside Improvements Planning Project. Project specific mitigation measures are described according to the affected environmental categories of noise, air quality, land use/socioeconomic, air quality, vegetation and wetlands, wildlife, water resources and soils. An extensive series of construction-related mitigation measures are presented in detail in Section 8.5.2. In addition, Massport has proposed other mitigation measures, that, while not specifically related to the Airside Project, would be implemented concurrently with the Preferred Alternative. These other measures are discussed in Section 8.5.3.

8.5.1.1 Unidirectional Commitment

The Runway 14/32 component of the Preferred Alternative has been conceived and proposed by Massport to accommodate unidirectional operations only. As a unidirectional runway, all aircraft arrivals would occur over Boston Harbor to the Runway 32 approach end and all departures would initiate from the Runway 14 end heading out over Boston Harbor. One of the issues raised in the May 7, 1999 EOEA Certificate and addressed during the SDEIS Panel process was a review of how the commitment to this unidirectional operational limitation for proposed Runway 14/32

could be reinforced. This section repeats a discussion of this issue before the Panel and constitutes a confirmation of Massport's commitment in this area.

Reinforcement of the unidirectional limitation occurs on three different levels. The first level centers on operational considerations. Massport will construct, mark and light Runway 14/32 to accommodate unidirectional operations only. In addition, the Hyatt Conference Center (174 feet high) is located within 1,300 feet of the west end of proposed Runway 14/32 and thereby obstructs the pertinent approach requirement, precluding arrivals from the west to the 14 approach end (see 14 CFR Part 77.25(d)). Another factor limiting westerly operations on Runway 14/32 is the lack of available facilities to allow aircraft to taxi to the 32 end. Without such facilities, aircraft would be required to use the Runway to taxi to the 32 end in order to position for takeoff in a westerly direction. Such a requirement would limit significantly the delay reduction benefits associated with utilizing Runway 14/32 for 32 departures.

The second level of reinforcement for the unidirectional limitation on Runway 14/32 is the environmental permit process itself. Approval under both federal and state environmental review processes is sought for a unidirectional runway only. Furthermore, the unidirectional limitation is being designated in the federal and state environmental review documents as a mitigation measure. This designation is supported by the goals of: (i) maximizing over water operations, thereby limiting operational impacts over residential areas, and (ii) allowing better attainment of Preferential Runway Advisory System (PRAS) goals. The unidirectional limitation as a Project mitigation element will be included as one of Massport's findings under M.G.L. Section 61 and is anticipated to be an element of both the federal Record of Decision and the certificate of the Massachusetts Secretary of Environmental Affairs, thus providing a further level of reinforcement of this limitation.

The first two levels of reinforcement discussed above entail physical restraints and governmental determinations within the jurisdiction of both the Federal Aviation Administration (to be addressed in the federal Record of Decision) and the Massachusetts Executive Office of Environmental Affairs (through the Secretary's Certificate on the Final EIR). A third level of reinforcement would provide an additional, representative governmental body and/or appropriate representative community groups, with contractual rights to enforce the unidirectional limitation. Massport reaffirms its willingness to enter into an appropriate contractual agreement with another governmental unit and/or representative community group. This agreement would (i) reiterate the unidirectional restrictions outlined above (e.g., limited markings and lighting, and no taxiway to accommodate takeoffs from the 32 end), (ii) allow Runway 14/32 to be constructed and operated as a unidirectional runway only, and (iii) provide such entity or group(s) with standing and a contractual mechanism to enforce the unidirectional commitment.

8.5.1.2 Noise

The Preferred Alternative includes construction of unidirectional Runaway 14/32, which provides flexibility in runway selection, and hence a greater ability to achieve PRAS goals. In order to maximize over-water operations and achieve the other PRAS-related benefits of Runway 14/32, it has been designed and will be permitted for unidirectional use only, i.e., it will only accommodate over-water arrivals and departures.

By allowing better achievement of PRAS goals, implementation of the Preferred Alternative significantly reduces the most severely noise-impacted populations within the 70 and 75 dB DNL contours in East Boston, Winthrop and Revere. However, by increasing utilization of Runway 15/33 to levels more consistent with PRAS goals, the Preferred Alternative will also increase the affected population within the future 65 dB DNL contours compared to the No Action Alternative and to 1998 conditions. Massport proposes to mitigate these impacts by providing sound insulation to affected residences in Chelsea, East Boston and South Boston that fall within the 65 dB DNL contour for the Preferred Alternative as defined by the 29M Low Fleet scenario. The estimated number of dwelling units listed in Table 8.5-1 reflects the total number of dwelling units that will be sound insulated as a result of the Preferred Alternative 29M Low DNL contour. For the project-eligible residences, the FAA will fund building code upgrades, to the extent necessary, to implement sound insulation improvements. The number of residences to be included within the noise mitigation program will be determined based on a more detailed block-by-block analysis to be performed during implementation.

Table 8.5-1
Proposed Sound Insulation Mitigation

Community	Estimated Number of Dwelling Units
Chelsea	1,100 to 1,200
East Boston	150 to 200
South Boston	25 to 50
Approximate Total	**1,275 to 1,450**

In summer 2000, Massport submitted a new sound insulation program based on the 1998 65 dB DNL contour with terrain-adjusted exposure levels to the FAA New England Regional Office. The FAA approved the new sound insulation contour for a two-year period. This sound insulation program is funded and is underway.

8.5.1.3 Land Use/Socioeconomic

Implementation of the Preferred Alternative is restricted to activities and purposes compatible with normal airport operations and existing land use plans. Construction of the runway and taxiway improvements will occur on the existing airfield.

Construction of unidirectional Runway 14/32 requires the demolition of Buildings 60 and 61 in the South Cargo Area. The tenant of Building 61 (the U.S. Postal Service) has plans to vacate the building, independent of the Airside Project. Therefore demolition of this building would not require relocation assistance. The leases for Building 60 extend beyond the proposed 2003 construction start of the Preferred Alternative. Therefore, relocation assistance for eligible tenants of Building 60 will be provided in accordance with applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and specifically Part 24 of 49 CFR and M.G.L. Chapter 79A and implementing regulations. Relocation assistance measures may include relocation advisory services and payments for moving and relocation costs, as applicable. Relocation resources would be available to all eligible business relocatees without discrimination.

8.5.1.4 Air Quality

The emissions inventory for carbon monoxide (CO), oxides of nitrogen (NOx), and volatile organic compounds (VOC) indicates that the Preferred Alternative is expected to generate the least amount of emissions of all Alternatives evaluated, including the No Action Alternative. The dispersion modeling results for the Preferred Alternative indicate that predicted levels of CO, NO_2 and PM_{10} are expected to be well within air quality standards and guidelines, under all future fleet scenarios analyzed. Therefore there are no negative air quality impacts associated with implementation of the Preferred Alternative. Rather, the Preferred Alternative provides an air quality benefit when compared to the No Action Alternative. This outcome is attributable to the delay reduction benefits associated with the Preferred Alternative.

To comply with the Clean Air Act Amendments of 1990 (CAAA), the FAA must determine if the proposed action is consistent with the State Implementation Plan (SIP) for ozone, since Logan is located in a non-attainment area for this pollutant. FAA procedures for compliance with General Conformity regulations mandated by Section 176(c) of the CAAA require that the FAA compare the emissions resulting from the Preferred Alternative against those emissions that would have occurred under the No Action Alternative.

Based on the analyses of NOx and VOCs (see Tables 6.4-5 and 6.4-6, respectively), FAA has determined that for all future conditions analyzed, the Preferred Alternative's net annual emissions (Preferred Alternative emissions minus No Action emissions) will be less than the applicable NOx and VOC emission levels in 40 CFR 93.153(b). In addition, FAA analysis of these levels shows that the Preferred Alternative would not be "regionally significant" because it would not account for 10 percent of the total emissions

inventories for NOx or VOC in the Boston ozone non-attainment area. Accordingly, FAA has determined that further analysis of the Preferred Alternative under Section 176(c) of the CAAA is not needed and that the implementation of the Preferred Alternative is presumed to conform to the SIP.

For NEPA purposes, FAA must also assess the air quality impacts of project alternatives. Dispersion modeling for the Preferred Alternative and the No Action Alternative shows that the proposed project would not exceed any National Ambient Air Quality Standards (NAAQS). Accordingly, FAA has determined that the Preferred Alternative would not cause significant air quality impacts.

8.5.1.5 Vegetation and Wetlands

All construction associated with the Preferred Alternative is confined to upland portions of the airfield. There will be no loss of wetlands as a result of the implementation of the Preferred Alternative. During construction, sediment and erosion controls will be implemented within the 100-foot buffer zone of the coastal bank. All areas disturbed by construction will be stabilized with vegetation common to the airfield once re-grading is completed.

8.5.1.6 Wildlife

Construction of the Centerfield Taxiway and the Taxiway Delta extension will result in the conversion of approximately 37 acres of grassland to paved surface thereby eliminating this area as habitat for the state-listed endangered upland sandpiper. Massport is working with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) to develop a mitigation plan that will address this impact. The mitigation plan comprises the following elements:

- Off-site habitat enhancement.
- Alteration of existing airfield grassland mowing procedures prior to the spring arrival of the upland sandpiper to encourage occupation of other areas of the airfield rather than the construction area.
- Implementation of a pre-construction and an ongoing pre-mowing upland sandpiper reconnaissance program to ensure that no individual birds remain in the areas being mowed.

Enhancement of bird habitat at Logan is not feasible due to the significant potential of increased aviation hazards. As part of the Conservation and Management Permit process under the Massachusetts Endangered Species Act (MESA), Massport has worked closely with the NHESP to develop a comprehensive onsite and offsite mitigation program to provide a "net benefit to the local population" of upland sandpipers. The offsite mitigation is expected to involve Massport funding of a grassland restoration/habitat enhancement program at Camp Edwards on Cape Cod. Under this program, Massport would provide funds to the Massachusetts National Guard (MNG) for the restoration of the former upland sandpiper habitat. A Memorandum of Understanding (MOU) is under

discussion among Massport, MNG and NHESP to ensure effective implementation of the program.

8.5.1.7 Water Resources

Construction of the runway and taxiways will result in a slight increase (3.8 percent) in peak runoff to tidal waters. Peak discharges will be minimized through the use of grassed swales and infiltration of runoff. No long-term impacts to water quality are anticipated. The existing stormwater drainage system will be reconfigured slightly to accommodate runoff from the runway and taxiway improvements. A low-flow water quality treatment structure may be incorporated into the existing system to handle the first flush runoff from portions of the airfield, if feasible. Sediment and erosion controls will be installed and maintained during all portions of construction to minimize adverse impacts. Construction will be phased to minimize the extent of bare soil at any one time. All new runway and taxiway construction within areas subject to DEP's Stormwater Management Policy will be consistent with applicable policies and performance standards.

8.5.1.8 Soils

Disposal of soils excavated for runway and taxiway construction will be regulated under the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000) and further reviewed for consistency with Massport's Soil Management Plan developed for the Logan Modernization projects.

8.5.2 Construction Mitigation

An extensive array of construction period mitigation measures is proposed for the Airside Project improvements that comprise the Preferred Alternative. Measures that specifically address safety, traffic, air quality, and noise will be written into the contract documents and specifications governing the contractors and subcontractors constructing the improvements. As in the Logan Modernization Program and other major construction projects at the airport, Massport will employ a team of on-site resident engineers and inspectors to monitor the contractors' compliance with mitigation measures.

Safety is of paramount concern since major construction will be occurring in proximity to operating runways and taxiways. All construction activity will be governed by the requirements of FAA AC 150/5370-2C *Operational Safety on Airports During Construction.*

Construction mitigation measures in a number of categories are described below.

8.5.2.1 Construction Traffic Operations

- Construction vehicles will be required to use State highways or Logan roadways, including the Ted Williams Tunnel, except when seeking access to local businesses. A clause to this effect will be inserted in all construction contracts relating to the Airside Project improvements.

- Truck routes for Logan projects that minimize impacts on the local communities are well established. Construction vehicles would be restricted from using Neptune Road, Maverick Street, and Porter Street in East Boston. Designated truck routes will be specified in all construction contracts.

- Construction employee parking spaces will not be permitted on the construction site nor will provisions be made for them elsewhere on-airport with the exception of a small number of spaces for supervisory personnel. It is expected that construction workers will access the airport via public transportation or via shuttle buses from off-airport parking areas.

- Police details will be employed at appropriate locations on the airport to manage traffic and ensure public safety.

8.5.2.2 Construction Air Quality

- As part of Massport's continued commitment to reduce impacts to the environment, Massport will require contractors to retrofit their heavy construction equipment with advanced pollution control devices during construction in accordance with DEP's Clean Air Construction Initiative. Contractor-owned equipment such as front-end loaders, backhoes, cranes and excavators will be retrofitted with oxidation catalysts. This device filters out and breaks down hydrocarbons, particulate matter and carbon dioxide associated with diesel emissions.

- During the construction process a regular program of street sweeping will minimize dust from construction vehicle movements on airport roads.

- Fugitive dust also will be controlled with water spray as needed during demolition and construction; no chemical soil stabilizers will be used.

- All trucks hauling demolition materials and excavate from the site will be covered and their wheels will be washed prior to leaving the construction site.

8.5.2.3 Construction Noise

General construction noise will be limited using techniques such as:

- Use of: (1) concrete crushers or pavement saws for building demolition or similar construction activity; (2) local power grid to reduce the use of generators, to the extent practicable and feasible.

- Attaching: (1) intake and exhaust mufflers, shields, or shrouds; (2) noise-deadening material to inside of hoppers, conveyor transfer points, or chutes.

- Maintaining equipment to ensure peak performance.

- Limiting (1) the numbers and duration of equipment idling on the site; (2) the use of annunciators or public address systems; (3) the use of air or gasoline-driven hand tools.

- Configuring, to the extent feasible, the construction site in a manner that keeps loud equipment and activities as far as possible from noise-sensitive locations.

When construction is scheduled during the nighttime hours and near community sensitive areas (e.g., East Boston and Winthrop) the following noise mitigation measures will be employed:

- The use of backup alarms for all pieces of equipment will be prohibited, to the extent appropriate. The contractors will be required to provide additional laborers to assure that equipment backup safely and comply with OSHA regulations.

- Trucks delivering bituminous concrete or other materials will be prohibited from slamming their tailgates to clean out truck beds after dumping.

- During paving operations, contractors will be required to turn off their vibratory compactors prior to exiting off of the newly placed pavement and onto the old existing pavement.

- Further noise control options will be evaluated during the ongoing project design to define their effectiveness and feasibility. Appropriate operational specifications and performance standards will be incorporated into the construction contract documents.

8.5.2.4 General Project Construction Mitigation

All construction activity associated with the Preferred Alternative will be governed by FAA Advisory Circular 150/5370-2C, Operation Safety on Airports During Construction. In addition, Massport has developed a number of mandatory construction mitigation procedures for all construction contractors. Massport will be responsible for overseeing all activities related to the Airside Project improvements including the following management practices:

- Full coordination with the CA/T Project, and with all relevant agencies including the FAA, MBTA, Massachusetts Turnpike Authority, Massachusetts DEP, Massachusetts Coastal Zone Management (CZM), Massachusetts Water Resources Authority (MWRA), City of Boston, Boston Water and Sewer Commission (BWSC), and utility companies, as appropriate.

- Preparation of detailed pre-construction plans for traffic maintenance, construction specifications for contractors, and coordinated scheduling of all construction activities (as well as the other measures noted in the ground transportation section above).

8.5.3 Environmental Justice

The Preferred Alternative has been reviewed in accordance with the Federal Executive Order 12898 and the applicable US DOT Order. After taking into account mitigation measures, the Preferred Alternative will not result in a disproportionate adverse impact to minority and/or low-income populations.

- There is no disproportionate high and adverse impact caused by the Preferred Alternative. Adverse noise impacts of the Preferred Alternative are not predominately borne by a minority or low-income population. Only 21 percent of the population within the 65 dB DNL contour is minority, compared Suffolk County, which is 38 percent minority. Less than 2 percent of the population within the 65 dB DNL contour has a household income less than 150 percent of poverty level.

- The additional area within the Preferred Alternative 65 dB DNL contour under the 29M Low Fleet scenario includes a predominantly Hispanic neighborhood in Chelsea which is predicted to experience an increase of 0.6 dB DNL or less. Under FAA's standards, this change is not a significant adverse impact. Nonetheless, mitigation of the increased noise exposure will be provided to the affected community in the form of residential sound insulation.

8.5.4 Other Mitigation Measures

Since the publication of the Airside Project Draft EIS/EIR, Massport has developed proposals for other mitigation measures including:

- PRAS Monitoring and Reporting
- Peak Period Monitoring Program
- Ongoing Discussion with Air Carriers to Reduce Use of Hushkitted Aircraft at Logan
- Regional Transportation Steps

8.5.4.1 PRAS Monitoring and Reporting

The forecast levels of PRAS achievement that are reflected in the Airside Project analysis show continuous improvement from current levels. The analysis presented in Chapter 4 of this Supplemental DEIS/FEIR clearly demonstrates the improvement in PRAS achievement that has taken place since its inception in the early 1980s, and especially since 1996, when the FAA began using the modified version of PRAS. Because Massport is committed to further improvement in PRAS achievement, it has designed protocols for monitoring and reporting PRAS performance. Chapter 4 describes the proposed PRAS Monitoring System and report distribution. In summary, the Massport Quarterly Noise Reports will include a number of new reports and the distribution list will be expanded to include all interested parties. In addition, the annual reports on runway utilization, dwell and persistence will also be included in the ESPR and its Environmental Data Reports (EDR). Over the longer-term, Massport will work with the FAA to design additional reports, which could help enhance the attainment of PRAS.

8.5.4.2 Peak Period Monitoring System and Peak Period Pricing Exemption Program

As part of this Supplemental DEIS/FEIR, Massport completed several analyses that allowed for a more complete understanding of Peak Period Pricing. (These analyses are described in Chapter 4 of this document.) The product of two of these analyses is reflected in Massport's mitigation plan. First, Massport recognizes the delay reduction benefits associated with Peak Period Pricing in an environment characterized by airline overscheduling and is committed to an ongoing program designed to regularly monitor peak period airline schedules. In Chapter 4, Massport identifies a criterion that would initiate of a phased administrative and regulatory process leading to the implementation of a Peak Period Pricing program. Massport's monitoring program, described in Chapter 4, will provide the appropriate mechanism for identifying the point at which the triggering criterion occurs.

Should Peak Period Pricing be invoked, Massport and others are concerned about the detrimental effects such a program could have on New England communities that rely on air service to Logan Airport for access to the national aviation system. As mitigation against the potential economic costs of Peak Period Pricing, Massport has evaluated an exemption program for eligible New England communities. The illustrative program provides a Peak Period surcharge exemption for two roundtrips per day in each eligible market. Consideration will also be given to operational factors, such as the use of the 2,557-foot Runway 15L/33R, that may justify exemptions without jeopardizing the delay reduction benefits of Peak Period Pricing. These exemptions will be included as part of a Peak Period Pricing regulatory proposal and will be subject to public comment and review along with the other elements of the Peak Period Pricing proposal, as required under the Commonwealth's Administrative Procedures Act.

8.5.4.3 Hushkitted Aircraft

As air carriers and cargo operators phased out their remaining Stage 2 aircraft (gross weight > 75,000 pounds), some opted to retrofit their older Stage 2 aircraft with "hushkits", designed to reduce noise levels to meet the Part 36 Stage 3 noise limits. Others replaced their Stage 3 aircraft with quieter, new Stage 3 technology aircraft, resulting in more significant noise abatement benefits. Operators at Logan Airport have done both. Substituting quieter, new Stage 3 technology results in more significant noise reduction benefits.

The reduction in noise exposure that will be experienced as fleet changes continue depends heavily on how many hushkitted aircraft remain in operation over the next few years. One especially promising sign, however, has been the recent fleet conversions by the US Airways and Delta Shuttles. Massport has worked to encourage each carrier to update its fleet from hushkitted Stage 3 Boeing 727-200 aircraft to Stage 3, new-technology aircraft. Subsequent to those discussions, both carriers announced fleet renewal programs. US Airways Shuttle now operates quieter Airbus 320 aircraft and the Delta Shuttle flies Stage 3 Boeing 737-800s. While not related to Preferred Alternative

impacts, Massport will continue to encourage air carriers to reduce the use of hushkitted Stage 3 aircraft at Logan.

8.5.4.5 Regional Transportation Steps

Massport is engaged in promoting increased utilization of regional airports and other travel modes to provide relief to Logan Airport. As an independent authority that owns and operates Logan and Hanscom Field, as well as the Tobin Bridge and many properties in the Port of Boston, and has operational responsibility for Worcester Regional Airport, Massport is just one of many agencies that influence regional transportation policy. With regard to aviation, Massport's primary responsibilities are the provision, operation and maintenance of airport infrastructure at Logan and Hanscom Field, and the operation of Worcester Regional Airport.

Massport and FAA are committed to cooperative transportation planning and are actively working with a broad array of transportation agencies and concerned parties to ensure an integrated, multi-modal regional transportation network. Massport has undertaken several initiatives to advance the role of regional airports in accommodating a greater share of the region's air travel demand. Massport is also an active participant in several interagency transportation planning forums pertaining to alternative intercity travel modes. Massport will also participate in the planned *New England Airports System Study*. Chapter 2 provides a detailed description of Massport's regional transportation efforts and initiatives.

8.5.5 Feasibility Study on NOx Emissions Reduction

The EOEA May 7, 1999 Certificate on the Airside Draft EIS/EIR requested that Massport undertake a feasibility study of implementing measures to reduce NOx emissions at Logan. This study was reported on in the *1999 Logan Airport Environmental Status and Planning Report* (filed in December 2000). A final report recommending NOx emissions reduction strategies will be presented to MEPA by the end of March 2001.

8.6 Permits

The following agency reviews, permits, approvals, and notices may be required for the implementation of the Preferred Alternative (Table 8.6-1).

Table 8.6-1
Project Permits and Approvals[1]

Agency Name	Permit or Action
Project Permits and Approvals	
Federal Aviation Administration	■ Airport Layout Plan (ALP) approval ■ National Environmental Policy Act (NEPA), Record of Decision ■ Airspace Analysis and Determination ■ Notice of Proposed Landing Area Construction or Alteration (14CFR, Part 171)
Massachusetts Executive Office of Environmental Affairs	■ Massachusetts Environmental Policy Act (MEPA) Certification
Massachusetts Coastal Zone Management	■ Federal Consistency Review
Massachusetts Historical Commission	■ Section 106 Review[2]
Commonwealth of Massachusetts, Department of Environmental Protection	■ Air Quality Certification ■ Water Quality Certification
U.S. Fish and Wildlife Service	■ Endangered Species Coordination
Construction Related Permits or Approvals	
Environmental Protection Agency	■ National Pollution Discharge Elimination System, Stormwater Discharge (Construction Activity)
Massachusetts Department of Environmental Protection, Division of Air Quality; Massachusetts Department of Labor and Industries; and US Environmental Protection Agency	■ Notice Concerning Commencement of Construction or Demolition
Massachusetts Natural Heritage and Endangered Species Program	■ Conservation and Management Permit
City of Boston, Conservation Commission	■ Order of Conditions

1 Not all these permits or approvals may be required.

2 The Massachusetts Historical Commission has concurred that the Preferred Alternative will have no adverse effect on significant historic properties. See Appendix H for the MHC letter to the FAA, dated December 21, 1999

8.7 Proposed Section 61 Findings

The following section outlines a draft Section 61 Finding for the Airside Improvements Planning Project.

DRAFT RESOLUTION AND VOTE OF MASSPORT BOARD IN COMPLIANCE WITH M.G.L. C.30, SECTION 61

WHEREAS, the Authority has been engaged in long-term planning activities to ensure that flight operations at Boston-Logan International Airport ("Logan") are conducted as safely and efficiently as possible in terms of on-time performance and in a manner consistent with established environmental impact policies and goals, and

WHEREAS, in the context of this planning process the Authority has identified a range of alternatives for achieving these results, including specific improvements to the airfield component of Logan, and

WHEREAS, pursuant to the National Environmental Policy Act ("NEPA") and Massachusetts Environmental Policy Act ("MEPA") and related regulations and other requirements, the Authority has been engaged in an environmental review process to examine a number of aspects of the various alternatives under review, including without limitation, purpose and need, analysis of the current and projected flight delay problem, role of the regional airport system and other transportation alternatives in meeting current and forecast passenger demand, affected environment, environmental consequences, environmental justice, and environmental mitigation, and

WHEREAS, the environmental review process under MEPA commenced with the filing of an Environmental Notification Form ("ENF") on July 31, 1995 which was the subject of a formal scoping process, including a public scoping session on September 23, 1995, which process in turn led to the issuance of a Certificate by the Secretary of the Executive Office of Environmental Affairs ("EOEA") defining the scope of the Airside Project Draft Environmental Impact Report ("Draft EIR"), and

WHEREAS, the Airside Project Draft EIR was filed on February 1, 1999, which document included the designation of a Preferred Alternative consisting of the following components: unidirectional Runway 14/32; Centerfield Taxiway; extension of Taxiway Delta; realignment of Taxiway November; improvements to the southwest corner taxiway system; and reduction in approach minimums on Runways 22L, 27, 15R and 33L (which component is an initiative of the Federal Aviation Administration), and

WHEREAS, the Draft EIR was the subject of an extended public comment period, including public hearings on Wednesday, April 7, 1999 at the State Transportation

Building in Boston and Thursday, April 8, 1999 at the Holiday Inn in East Boston, which resulted in the issuance of a certificate from the Secretary of EOEA dated May 7, 1999, in which said Secretary determined that the Draft EIR adequately and properly complied with MEPA and with its implementing regulations and specified certain additional analytic work, including additional mitigation measures and responses to substantive comments, to be included in the Final Environmental Impact Report ("Final EIR"), and

WHEREAS, the Authority filed the Final EIR on [March 15], 2001 and on [DATE] the Secretary of EOEA issued a certificate determining...[TO BE INSERTED]...;

NOW THEREFORE BE IT RESOLVED AND VOTED:

A. The Authority hereby finds that: (a) the environmental impacts associated with the Airside Improvements Project, EOEA No. 10458, and selection and implementation of the Preferred Alternative, are properly and adequately described and evaluated in the ENF, Draft EIR and Final EIR and the description of such environmental impacts set forth in said documents is adopted as a specific finding herein, and (b) by implementing the mitigation measures set forth in the Final EIR (and summarized in this resolution), as authorized and directed by this resolution, all feasible means and measures will be taken to avoid or minimize the description of any environmental impacts as determined by this resolution.

B. The Authority hereby further finds and determines that the improvements constituting the Preferred Alternative as set forth in the Draft EIR and Final EIR will enhance the operation of Logan by improving safety conditions and on-time performance of aircraft and will provide related environmental benefits.

C. The Authority hereby makes the additional findings set forth below in accordance with M.G.L. c.30, Section 61:

IMPLEMENTATION OF MITIGATION MEASURES

The Authority hereby adopts the following environmental mitigation, which measures are set forth in Chapter 8 and other applicable provisions of the Final EIR, and hereby authorizes and directs the Executive Director to implement such measures.

1.0 Runway 14/32 Unidirectional Limitation

Runway 14/32 will be operated as a unidirectional runway to accommodate over-water flight operations only, i.e., arrival operations in an east-to -west direction to the

Runway 32 approach end and departure operations from a west-to-east direction from the Runway 14 departure end. Construction specifications will require that lighting, marking and instrumentation components of Runway 14/32 be done consistent with the above-described unidirectional limitations. No parallel or other type of taxiway facility will be constructed to allow departures from an east-to-west direction from the 32 end. The Authority will, if requested, enter into an appropriate contract with an appropriate governmental body and/or representative community group(s) to provide rights to enforce the intended unidirectional restriction of Runway 14/32.

2.0 Regional Transportation Policy - Regional Airport Network

The Authority is engaged in promoting increased utilization of regional airports and other travel modes to provide relief to Logan Airport. As an independent authority that owns and operates Logan and Hanscom Field, as well as the Tobin Bridge and many properties in the Port of Boston, and has operational responsibility for Worcester Regional Airport, the Authority is just one of many agencies that influence regional transportation policy. With regard to aviation, the Authority's primary responsibilities are the provision, operation and maintenance of airport infrastructure at Logan and Hanscom Field, and the operation of Worcester Regional Airport.

The Authority supports a regional transportation policy to improve the efficient use of the region's transportation infrastructure by expanding use of the regional airports and other transportation modes, where appropriate. To achieve these goals, the Authority is committed to cooperative transportation planning and is actively working with a broad array of transportation agencies and concerned parties to ensure an integrated, multi-modal regional transportation network. The Authority has undertaken several initiatives to advance the role of regional airports in accommodating a greater share of the region's air travel demand. The Authority is also an active participant in several interagency transportation planning forums pertaining to alternative intercity travel modes.

The Authority's efforts in connection with this Regional Transportation Policy will include:

2.1 Worcester Regional Airport

The Authority will continue to exercise operational control over Worcester Regional Airport, continue to work to attract new air service and develop and implement a marketing campaign targeted to travelers and airlines to provide awareness of Worcester Regional Airport and enhance its utilization within its primary service area.

<u>2.2 Cooperative Regional Transportation Planning Initiatives</u>

The Authority will:

- Maintain an aviation information database and distribute quarterly reports that track aviation trends at all of the regional airports to parties interested in promoting regional airport services;
- Compile and issue periodic statistical summaries of passenger levels, aircraft operation counts and airline schedule data at the major New England regional airports;
- Prepare an Annual Report summarizing regional airport trends and service developments;
- Participate in meetings of other regional and state aviation organizations, including the Massachusetts Aeronautics Commission and transportation summit meetings organized by the New England governors;
- Continue to cooperate with the Federal Aviation Administration and directors of other regional airports to undertake and complete a *New England Airports System Study* to evaluate the performance of the regional airports since the completion of the *1995 Regional Airport Air Passenger Service Study*; reevaluate airport market areas and capture rates; evaluate the potential for international, charter and cargo services at the regional airports; evaluate capacity issues at the regional airports; and consider the development of high occupancy vehicle/ground transportation and rail alternatives to improve access to the regional airports;
- Continue to encourage various transportation initiatives (e.g., commuter rail, rail or other links between regional airports) by relevant agencies or other governmental bodies through Transportation Bond Bill or other legislative initiatives that may be required to implement an improved effective regional transportation system;
- Continue to assist in the development of a comprehensive rail plan for New England, including the designation of high rail corridors;
- Continue to support inter-city rail planning through membership in the Metropolitan Planning Organization (MPO).

3.0 Residential Sound Insulation

The construction and operation of Runway 14/32 will significantly reduce the most severely noise-impacted populations within the 70 and 75 dB DNL contours in East Boston, Winthrop and Revere. This reduction results from a distribution of flights more consistent with the Preferential Runway Advisory System (PRAS) goals. However, the change in distribution levels resulting from the availability of Runway 14/32 will also increase the population within the future 65 dB DNL contours in comparison to the No Action alternative and in comparison to 1998 conditions. This increase will be mitigated by providing sound insulation to

affected residences (located in Chelsea, East Boston and South Boston) that fall within the 65 dB DNL contour for the Preferred Alternative as defined in the 1999 29M Low Fleet scenario (see Final EIR, Table 8.5-1). The number of dwelling units that will be sound insulated are within the new airport wide contours reflecting the conditions of the 29M Low Fleet DNL contour and the sound insulation program will be structured to meet FAA funding requirements. Relevant FAA general sound insulation program funding requirements do not provide sound insulation benefits for buildings that do not meet applicable building codes. However, in order to ensure that all residents of buildings who would otherwise be eligible for sound insulation do not lose eligibility because of building code considerations, funds will be provided, through special Project mitigation commitments from the FAA, to allow for building code upgrades to be made on individual homes to the extent that building code upgrades are necessary to allow the sound insulation work to be completed. To further ensure that all eligible residences are included within the sound insulation program, the specific identity of residences will be determined based upon a detailed block-by-block analysis to be performed during implementation.

4.0 Tenant Relocation Assistance

As described in the Draft EIR and Final EIR, the construction of Runway 14/32 will require the demolition of existing Cargo Building 60 and Cargo Building 61. The current tenant, pursuant to plans independent of the Airside Improvement Project, will vacate Building 61. In connection with its acquisition of Building 60 the Authority will provide relocation assistance to building tenants as required by applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Part 24 of 49 CFR and M.G.L. Chapter 79A and implementing regulations. Relocation resources will be made available to all eligible business relocatees without discrimination.

5.0 Vegetation and Wetlands

All construction associated with the Preferred Alternative is confined to upland portions of the Logan airfield. There will be no loss of wetlands as a result of the implementation of the Preferred Alternative. During construction, sediment and erosion controls will be implemented within the 100-foot buffer zone of the coastal bank. All areas disturbed by construction will be stabilized with vegetation common to the airfield once re-grading is completed.

6.0 Wildlife

Construction of the Centerfield Taxiway and the Taxiway Delta extension will result in the conversion of approximately 37 acres of grassland to paved surface, thereby eliminating this area as habitat for the upland sandpiper. In coordination with the Massachusetts Natural Heritage and Endangered Species Program (NHESP), the

Authority will develop a mitigation plan to address this impact and that will comprise the following elements:

- Alteration of existing airfield grassland mowing procedures prior to the spring arrival of the upland sandpiper to encourage occupation of other areas of the airfield rather than the construction area.
- Implementation of a pre-construction and an on-going pre-mowing upland sandpiper reconnaissance program to ensure that no individual birds remain in the area.
- Off-site habitat enhancement.

Enhancement of bird habitat at Logan is not feasible due to the significant potential of increased aviation hazards. As part of the Conservation and Management Permit process under the Massachusetts Endangered Species Act (MESA), the Authority in coordination with the NHESP will develop a comprehensive onsite and offsite mitigation program to provide a "net benefit to the local population" of upland sandpipers. The offsite mitigation is expected to involve funding from the Authority for a grassland restoration/habitat enhancement program at Camp Edwards on Cape Cod. Under this program, the Authority will provide funds to the Massachusetts National Guard (MNG) for restoration of the former upland sandpiper habitat. A Memorandum of Understanding (MOU) between the Authority and MNG to ensure effective implementation of the program is anticipated. In the event that such a program at Camp Edwards is not available, an appropriate alternative program acceptable to the NHESP will be developed and implemented.

7.0 Water Resources

Construction of the Runway 14/32 and Taxiway components of the Preferred Alternative will result in a slight increase (3.8 percent) in peak runoff to tidal waters. Peak discharges will be minimized through the use of grassed swales and infiltration of runoff. No long-term impacts to water quality are anticipated. The existing stormwater drainage system will be reconfigured slightly to accommodate runoff from the runway and taxiway improvements. A low-flow water quality treatment structure will be incorporated into the existing system to handle the first flush runoff from portions of the airfield, if feasible. Sediment and erosion controls will be installed and maintained during all portions of construction to minimize adverse impacts. Construction will be phased to minimize the extent of bare soil at any one time. All new runway and taxiway construction within areas subject to DEP's Stormwater Management Policy will be consistent with applicable policies and performance standards.

8.0 Soils

Disposal of soils excavated for runway and taxiway construction will be completed in compliance with the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000, and will be conducted in a manner consistent with the Authority's Soil Management Plan developed for the Logan modernization projects.

9.0 General Construction Mitigation

Appropriate measures to enhance safety and mitigate traffic, air quality, and noise impacts will be incorporated into the contract documents and specifications governing the activities of contractors and subcontractors constructing all construction elements of the Preferred Alternative.

All construction activity associated with the Preferred Alternative will comply with FAA Advisory Circular 150/5370-2C, Operation Safety on Airports During Construction. In addition, the Authority will utilize a number of mandatory construction mitigation procedures for all construction contractors. The Authority will employ a team of on-site resident engineers and inspectors to monitor all construction activities related to the Preferred Alternative, including the following management practices:

- Full coordination with the CA/T Project, and with all relevant agencies including the FAA, MBTA, Massachusetts Turnpike Authority, Massachusetts DEP, Massachusetts Coastal Zone Management (CZM), Massachusetts Water Resources Authority (MWRA), City of Boston, Boston Water and Sewer Commission (BWSC), and utility companies, as appropriate.

- Preparation of detailed pre-construction plans for traffic maintenance, construction specifications for contractors, and coordinated scheduling of all construction activities (as well as the other measures noted in the ground transportation sections above).

Construction mitigation measures in a number of categories are described below.

9.1 Construction Traffic Operations

- Construction vehicles will be required to use State highways or Logan roadways, including the Ted Williams Tunnel, except when seeking access to local businesses. A clause to this effect will be inserted in all construction contracts relating to the construction components of the Preferred Alternative.

- Truck routes for Logan projects that minimize impacts on the local communities will be established. Construction vehicles would be restricted from using Neptune Road, Maverick Street, and Porter Street in East Boston. Designated truck routes will be specified in all construction contracts.

- Construction employee parking spaces will not be permitted on the construction site nor will provisions be made for them elsewhere on-airport with the exception of a small number of spaces for supervisory personnel. It is

expected that construction workers will access the airport via public transportation or via shuttle buses from off-airport parking areas.

- Police details will be employed at appropriate locations on the airport to manage traffic and ensure public safety.

9.2 Construction Air Quality

- The Authority will require contractors to retrofit their heavy construction equipment with advanced pollution control devices during construction in accordance with DEP's Clean Air Construction Initiative. Contractor-owned equipment such as front-end loaders, backhoes, cranes and excavators will be retrofitted with oxidation catalysts. This device filters out and breaks down hydrocarbons, particulate matter and carbon dioxide associated with diesel emissions.

- During the construction process a regular program of street sweeping will minimize dust from construction vehicle movements on airport roads.

- Fugitive dust also will be controlled with water spray as needed during demolition and construction; no chemical soil stabilizers will be used.

- All trucks hauling demolition materials and excavate from the site will be covered and their wheels will be washed prior to leaving the construction site.

9.3 Construction Noise

General construction noise will be limited using techniques such as:

- Use of: (1) concrete crushers or pavement saws for building demolition or similar construction activity; (2) local power grid to reduce the use of generators, to the extent practicable and feasible.

- Attaching (1) intake and exhaust mufflers, shields, or shrouds; (2) noise-deadening material to inside of hoppers, conveyor transfer points, or chutes.

- Maintaining equipment to ensure peak performance.

- Limiting (1) the numbers and duration of equipment idling on the site; (2) the use of annunciators or public address system; (3) the use of air or gasoline-driven hand tools.

- Configuring, to the extent feasible, the construction site in a manner that keeps loud equipment and activities as far as possible from noise-sensitive locations.

When construction is scheduled during the nighttime hours and near community sensitive areas (e.g., East Boston and Winthrop) the following noise mitigation measures will be employed.

- The use of backup alarms for all pieces of equipment will be prohibited, to the extent appropriate. The Contractor will be required to provide additional laborers to assure that equipment backup safely and comply with OSHA regulations.

- Trucks delivering bituminous concrete or other materials will be prohibited from slamming their tailgates to clean out truck beds after dumping.

- During paving operations, the contractors will be required to turn off their vibratory compactors prior to exiting off the newly place pavement and onto the old existing pavement.

Further noise control options will be evaluated during the ongoing project design to define their effectiveness and feasibility. Appropriate operational specifications and performance standards will be incorporated into the construction contract documents.

10.0 Preferential Runway Advisory System (PRAS) Monitoring and Reporting

The Authority will develop and implement a PRAS Monitoring System and will implement a new distribution system for reports. The Massport Quarterly Noise Reports will be expanded to include a number of new reports, and the distribution list will be expanded to include interested parties, including the Logan Citizens Advisory Committee. In addition, the annual reports on runway utilization, dwell and persistence will also be included as part of the Environmental Status and Planning Report (ESPR) (formerly GEIR) filings made with the Executive Office of Environmental Affairs. Over the longer-term, the Authority will work with the FAA to design additional reports that could help enhance the attainment of PRAS.

11.0 Peak Period Monitoring System and Exemption Program

The Authority will establish and maintain a monitoring system that will; (i) provide advance indication of when airline overscheduling is likely to become a significant contributing factor to aircraft arrival and departure delays at Logan, and (ii) identify the portion of the day during which an overscheduling condition would likely occur. As initially conceived, the key components of this system will be as follows:

- Projections of Logan flight activity will be developed on a semi-annual basis. These projections will be prepared 4 to 6 months in advance and will represent estimates of flight levels by hour for the upcoming seasonal schedule period. Projections will be based on the most recent activity levels of Logan, historic seasonality patterns, and advance flight schedules submitted by air carriers to the Official Airline Guide (OAG). The projections will also reflect non-scheduled activity including charter and general aviation.

- Logan's average runway capacity under Visual Flight Rule (VFR) conditions will be evaluated as required.

- Delays due to overscheduling will be quantified though an analysis that simulates the projected flight schedules against Logan's VFR capacity. Delays

will be estimated by hour to permit designation of a specific peak period when overscheduling conditions are likely to cause significant delays.

When projected delays due to air carrier overscheduling are estimated to reach or exceed an average level of 15 minutes per flight (which standard is based on FAA criteria) over a period of three or more consecutive hours in a day, the Authority will take the following curative actions:

Phase 1: Voluntary Schedule Adjustments. The Authority will meet individually with air carriers that exhibit significant levels of flight activity during the identified peak period. These carriers will be informed that Peak Period Pricing will be invoked for the relevant period unless flight schedules are reduced below key threshold levels. If voluntary schedule adjustments occur at levels that will avoid the original overscheduling situation, no further action will be necessary.

Phase 2: Regulatory Action. If voluntary schedule adjustments do not eliminate the overscheduling situation, the Authority will take the necessary steps consistent with applicable legal requirements to put into effect a surcharge applied to flights arriving and departing Logan during identified peak hours. A properly structured exemption program, consistent with federal law requirements, will also be put into effect. The purpose of the exemption program is to prevent affected communities from losing access to the national airport system.

The Authority will continue to monitor flight schedules at Logan on a periodic basis and make adjustments to the peak period as warranted by future schedule changes. The Authority will make adjustments to the monitoring system and related action plan as may be appropriate to address any overscheduling situation that may arise.

12.0 Hushkitted Aircraft

As air carriers and cargo operators phased out their remaining Stage 2 aircraft (gross weight >75,000 pounds) in compliance with federal statutory requirements, some opted to retrofit their older Stage 2 aircraft with "hushkits", designed to reduce noise levels to meet the Part 36 Stage 3 noise limits. Other carriers and operators replaced their Stage 2 aircraft with new technology Stage 3 airplanes. Air carriers and cargo operators at Logan Airport have done both. Substituting new full Stage 3 aircraft results in more significant noise abatement benefits.

The reduction in noise exposure that will be experienced as fleet changes continue depends heavily on how many hushkitted aircraft remain in operation over the next few years. While not related to Airside Project impacts, the Authority will continue to work with air carriers to encourage the use of full Stage 3 aircraft in place of hushkitted equipment.

Reviewers List

This Supplemental Draft EIS/Final EIR is being distributed to federal, state and city agencies and to the interested parties on the following pages. This list includes those entities that the Federal Aviation Administration's Airport Environmental Handbook (Order 5050.4A) and the Massachusetts Environmental Policy Act regulations (301 CMR 11.00) require as part of the review of the document, including representatives of government agencies and community groups concerned with airport activities. Copies of this report are available at the following public libraries: Bedford Public Library; Boston Public Library, Main Branch, Charlestown Branch, Dedham Public Library; Dudley Branch (Roxbury), East Boston Branch, Jamaica Plain Branch, Orient Heights Branch, South Boston Branch, Tremont Street; Watson Park Library in Braintree; Brookline Main Library; Chelsea Public Library; Cohasett Public Library; Concord Public Library; Edgartown Free Public Library; Everett Public Library; Hingham Public Library; Hull Public Library; Cary Memorial Library; Lincoln Public Library; Malden Public Library; Medford Public Library; Melrose Public Library; Milton Public Library, Main Branch; Nahant Public Library; Nantucket Atheneum; Quincy Public Library, Thomas Crane Branch; Provincetown Public Library; Revere Public Library; Somerville Central Library; Weymouth Public Library; and Winthrop Public Library. Additional copes of this report are available from Massport, 205 South, Suite 205/206S, Logan Office Center, One Harborside Drive, East Boston, MA 02128, telephone (617) 568-3500. The following persons may be contacted for additional information concerning this document:

Mr. John Silva
Federal Aviation Administration
12 New England Executive Park
Burlington, MA 01803
781-238-7602

Ms. Betty Desrosiers
Massachusetts Port Authority
Logan Office Center, Suite 205/206S
One Harborside Drive
East Boston, MA 02128
617-568-3500

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Federal Government

Elected Officials

*U.S. Senator Edward M. Kennedy
2400 J. F. Kennedy Federal Building
Room 409
Boston, MA 02203

*U.S. Senator John F. Kerry
One Bowdoin Square, 10th Floor
Boston, MA 02114

*U.S. Representative Michael E. Capuano
110 First Street`
Cambridge, MA 02141

*U.S. Representative William Delahunt
15 Cottage Avenue, 4th Floor
Quincy, MA 02169

*U.S. Representative Barney Frank
29 Crafts Street
Newton, MA 02158

*U.S. Representative Edward J. Markey
Five High Street, Suite 101
Medford, MA 02155

*U.S. Representative James McGovern
34 Mechanic Street, 1st Floor
Worcester, MA 01608

*U.S. Representative Martin Meehan
11 Kearney Square
Lowell, MA 01852

*U.S. Representative John Joseph Moakley
U.S. Courthouse, Suite 3110
Courthouse Way
Boston, MA 02210

*U.S. Representative John Tierney
17 Peabody Square
Peabody, MA 01960

Federal Agencies

Environmental Protection Agency

Elizabeth Higgins
Regional Administration
U.S. Environmental Protection Agency
New England Region
One Congress Street
Boston, MA 02114

Office of Federal Activities
NEPA Compliance Division
EIS Filing Secretary
401 M Street, SW
Room 2252-A
Washington, D.C. 20460

Federal Aviation Administration

*Jane Garvey
FAA Administrator
800 Independence Avenue
Washington D.C. 20591

*Robert Bartanowicz
New England Regional Administrator
Department of Transportation
Federal Aviation Administration
New England Region
12 New England Executive Park
Box 510
Burlington, MA 01803

Joseph P. Davies
Manager
Air Traffic Control Tower
Department of Transportation
Federal Aviation Administration
Logan International Airport
East Boston, MA 02128

Vincent Scarano, Manager
Airports Division, ANE-600
Department of Transportation
Federal Aviation Administration
New England Region
12 New England Executive Park
Burlington, MA 01803

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Lynne S. Pickard
Federal Aviation Administration
Office of Airport Planning & Programming, APP-600
800 Independence Avenue, SW
Washington, D.C. 20591

Terry Fleeger
Federal Aviation Administration
New England Region – Air Traffic Division
12 New England Executive Park
Box 510
Burlington, MA 01803

Federal Aviation Administration Special Review Panel

Honorable Jane Swift, Lieutenant Governor
Office of the Governor
Massachusetts State House, Room 360
Boston, MA 02133

Richard Egan, Chairman
EMC Corporation
35 Parkwood Drive
Hopkinton, MA 01748

John Butler
Volpe Transportation Center
55 Broadway, Kendal Square
Cambridge, MA 02142

Raymond Tye, Chairman
United Liquors Ltd.
One United Drive
West Bridgewater, MA 02379

Mary Ellen Welch
CARE
225 Webster Street
East Boston, MA 02128

Suzanne Orenstein
218 Common Lane
Prides Crossing, MA 01965

Representative Byron Rushing
Massachusetts State House, Room 544
Boston, MA 02133

Federal Highway Administration

*Stanley Gee
Division Administrator
Federal Highway Administration
55 Broadway, 10th Floor
Cambridge, MA 02142

National Oceanic and Atmospheric Administration

*Chris Mantzaris
Habitat Program Coordinator
National Marine Fisheries Service
National Oceanic Atmospheric Administration
One Blackburn Drive
Gloucester, MA 01930

United States Army Corps of Engineers

*Lt. Colonel Michael Pratt
Division Engineer
U.S. Army Corps of Engineers
696 Virginia Rd.
Concord, MA 01742-2751

United States Department of Commerce

Susan B. Fruchter
Acting NEPA Coordinator
Office of the Under Secretary for Oceans and Atmosphere
NOAA
Room 5813
Department of Commerce
14th and Constitution, NW
Washington, DC 20230

United States Department of Energy

Division of NEPA Affairs
Department of Energy
Room 4G064
1000 Independence Avenue, SW
Washington, D.C. 20585

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

United States Department of Housing and Urban Development

Director, Housing and Urban Development
O'Neil Federal Building
10 Causeway Street
Boston, MA 02222-1092

United States Department of Interior

Director of the Office of Environmental Affairs
Main Interior Building
1849 C Street NW
Washington, D.C. 20240

United States Department of Transportation

Mr. Bruce Young Candelaria
United States Department of Transportation
Liaison Outreach & Services Program
67 Broad Street
Boston, MA 02109

United States Fish and Wildlife Service

*Ronald N. Lambertson
Regional Director
U.S. Fish and Wildlife Service
Department of the Interior
One Gateway Center
Newton, MA 02158

United States Postal Service

Director, Support Services
United States Postal Service
GMF, Room 203
Boston, MA 02205-9991

State Government

Elected Officials

*Senate President Thomas F. Birmingham
Massachusetts State House, Room 332
Boston, MA 02133

*Senator Edward Clancy, Jr.
Massachusetts State House, Room 410
Boston, MA 02133

*Senator Cynthia Creem
Massachusetts State House, Room 416B
Boston, MA 02133

*Senator Robert A. Havern, III
Massachusetts State House, Room 513
Boston, MA 02133

*Senator Robert Hedlund
Massachusetts State House, Room 309
Boston, MA 02133

*Senator Brian Joyce
Massachusetts State House, Room 413A
Boston, MA 02133

*Senator Stephen F. Lynch
Massachusetts State House, Room 424
Boston, MA 02133

*Senator Michael Morrissey
Massachusetts State House, Room 413B
Boston, MA 02133

*Senator Therese Murray
Massachusetts State House, Room 511
Boston, MA 02133

*Senator Frederick E. Berry
Massachusetts State House, Room 421
Boston, MA 02133

*Senator Charles E Shannon, Jr.
Massachusetts State House, Room 511A
Boston, MA 02133

*Senator Richard Tisei
Massachusetts State House, Room 313
Boston, MA 02133

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Senator Steven Tolman
Massachusetts State House, Room 213A
Boston, MA 02133

*Senator Robert E. Travaglini
Massachusetts State House, Room 511-B
Boston, MA 02133

*Senator Marian Walsh
Massachusetts State House, Room 405
Boston, MA 02133

*Senator Dianne Wilkerson
Massachusetts State House, Room 312C
Boston, MA 02133

*Representative Jarrett Barrios
Massachusetts State House, Room 130
Boston, MA 02133

*Representative Ruth B. Balser
Massachusetts State House, Room 134
Boston, MA 02133

*Representative Vincent Ciampa
Massachusetts State House, Room 472
Boston, MA 02133

*Representative Robert A. DeLeo
Massachusetts State House, Room 20
Boston, MA 02133

*Representative Paul C. Demakis
Massachusetts State House, Room 443
Boston, MA 02133

*Representative David Donnelly
Massachusetts State House, Room 136
Boston, MA 02133

*Representative Christopher G. Fallon
Massachusetts State House, Room 136
Boston, MA 02133

*Representative Michael Festa
Massachusetts State House, Room 473F
Boston, MA 02133

*Representative Kevin Fitzgerald
Massachusetts State House, Room 527A
Boston, MA 02133

*Speaker Thomas Finneran
Massachusetts State House, Room 356
Boston, MA 02133

*Representative Gloria Fox
Massachusetts State House, Room 167
Boston, MA 02133

*Representative John Fresolo
Massachusetts State House, Room 33
Boston, MA 02133

*Representative William Galvin
Massachusetts State House, Room 238
Boston, MA 02133

*Representative Michael P. Cahill
Massachusetts State House, Room 22
Boston, MA 02133

*Representative Brian Golden
Massachusetts State House, Room 473-B
Boston, MA 02133

*Representative Paul C. Casey
Massachusetts State House, Room 273B
Boston, MA 02133

*Representative John A. Hart
Massachusetts State House, Room 477
Boston, MA 02133

*Representative Frank Hynes
Massachusetts State House, Room 489
Boston, MA 02133

*Representative Patricia Jehlen
Massachusetts State House, Room 275
Boston, MA 02133

*Representative Robert Koczera
Massachusetts State House, Room 38
Boston, MA 02133

*Representative Jay Kaufman
Massachusetts State House, Room 489
Boston, MA 02133

*Representative Maryanne Lewis
Massachusetts State House, Room 171
Boston, MA 02133

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Representative Liz Malia
Massachusetts State House, Room 540
Boston, MA 02133

*Representative Francis Mamini
House Minority Leader
Massachusetts State House, Room 124
Boston, MA 02133

*Representative Ronald Mariano
Massachusetts State House, Room 254
Boston, MA 02133

*Representative J. James Marzilli, Jr.
Massachusetts State House, Room 236
Boston, MA 02133

*Representative Bruce J. Ayers
Massachusetts State House, Room 540
Boston, MA 02133

*Representative Eugene L. O'Flaherty
Massachusetts State House, Room 479
Boston, MA 02133

*Representative Shirley Owens-Hicks
Massachusetts State House, Room 156
Boston, MA 02133

*Representative Douglas Petersen
Massachusetts State House, Room 473F
Boston, MA 02133

*Representative Anthony Petruccelli
Massachusetts State House, Room 166
East Boston, MA 02133

*The Honorable Kathi-Ann Reinstein
House of Representatives
Massachusetts State House, Room 236
Boston, MA 02133

*Representative Angelo Scaccia
Massachusetts State House, Room 167
Boston, MA 02133

*Representative Joseph Sullivan
Massachusetts State House, Room 443
Boston, MA 02133

*Representative Walter Timilty
Massachusetts State House, Room 254
Boston, MA 02133

*Representative Stephen Tobin
Massachusetts State House, Room 166
Boston, MA 02133

*Representative Timothy Toomey, Jr.
Massachusetts State House, Room 39
Boston, MA 02133

State Agencies

Executive Office of Environmental Affairs

Robert A. Durand
Secretary
Executive Office of Environmental Affairs
251 Causeway Street, Suite 900
Boston, MA 02114

Jay H. Wickersham
Asst. Secretary of Environmental Affairs
MEPA Office
Executive Office of Environmental Affairs
251 Causeway Street, Suite 900
Boston, MA 02114

Arthur Pugsley
Associate Environmentalist, MEPA Office
Executive Office of Environmental Affairs
251 Causeway Street, Suite 900
Boston, MA 02114

Department of Environmental Protection

Lauren Liss
Commissioner
Dept. of Environmental Protection
205 Lowell Street
Wilmington, MA 01887

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*David Murphy, P.E.
MEPA Coordinator
Commissioner's Office
Dept. of Environmental Protection
One Winter Street, 9th Floor
Boston, MA 02108

*Nancy Seidman
Deputy Division
Director of Air Quality Program Planning
Dept. of Environmental Protection
One Winter Street, 9th Floor
Boston, MA 02108

*Steven G. Lipman, P.E.
Special Projects Coordinator
Dept. of Environmental Protection
One Winter Street, 6th Floor
Boston, MA 02108

*Iris Davis
Bureau of Waste Site Cleanup
Section Chief
Permits/Risk Reduction - NERO
Department of Environmental Protection
205 Lowell Street
Wilmington, MA 01887

*David Shakespeare
MEPA Coordinator
Northeast Regional Office
Dept. of Environmental Protection
205 Lowell Street
Wilmington, MA 01887

*Christine Kirby
Transportation Programs
Department of Environmental Protection
One Winter Street, 9th Floor
Boston, MA 02108

*Peter Dore
Bureau of Resource Protection - NERO
Department of Environmental Protection
205 Lowell Street
Wilmington, MA 01887

*James Sprague
Section Chief
Wetlands and Waterways - NERO
Department of Environmental Protection
205 Lowell Street
Wilmington, MA 01887

Department of Environmental Management

*Peter C. Webber
Commissioner
Dept. of Environmental Management
100 Cambridge Street, 19th Floor
Boston, MA 02202

Executive Office of Economic Affairs

*David A. Tibbetts
Secretary
Executive Office of Economic Affairs
One Ashburton Place, Room 2101
Boston, MA 02108

Department of Housing and Community Development

*Jane Wallis Gumble
Director
Department of Housing and Community Development
100 Cambridge Street, Room 1804
Boston, MA 02202

*Verna Friedman
Executive Assistant
Department of Housing and Community Development
100 Cambridge Street, Room 1804
Boston, MA 02202

*Karen Arone
Coordinator, State Clearinghouse
Department of Housing and Community Development
One Congress Street, Suite 1001
Boston, MA 02114-2023

*Mary Padula
Secretary
Department of Housing and Community Development
One Congress Street, Suite 1001
Boston, MA 02114-2023

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Department of Fisheries, Wildlife and Environmental Law Enforcement

*David M. Peters
Commissioner
Department of Fisheries, Wildlife and Environmental Law Enforcement
Division of Marine Fisheries
100 Cambridge Street, 19th Floor
Boston, MA 02202

Hanni Dinkello
Environmental Reviewer
Mass. Natural Heritage Program
Department of Fisheries, Wildlife & Environmental Law Enforcement
100 Cambridge Street, 19th Floor
Boston, MA 02202

Massachusetts Coastal Zone Management

Margaret Brady
Director
Massachusetts Coastal Zone Management Office
Executive Office of Environmental Affairs
251 Causeway Street, Suite 900
Boston, MA 02114-2119

Metropolitan District Commission

*David Balfour
Commissioner
Metropolitan District Commission
20 Somerset Street
Boston, MA 02108

*Julia O'Brien
Director of Planning
Metropolitan District Commission
Planning Department
20 Somerset Street
Boston, MA 02202

Executive Office of Health and Human Services

*Suzanne Condon
Director,
Bureau of Environmental Health Assessment
EOH&HS
250 Washington Street, 7th Floor
Boston, MA 02108

Executive Office of Public Safety

*Joseph F. Lalli
Acting Commissioner
Massachusetts Department of Public Safety
One Ashburton Place
Boston, MA 02108

*Winthrop Farwell
Commissioner
Massachusetts Department of Public Safety
One Ashburton Place
Boston, MA 02108

Executive Office of Transportation and Construction

*Kevin J. Sullivan
Secretary
Executive Office of Transportation and Construction
10 Park Plaza, Room 3170
Boston, MA 02116

*James Cope
Director of Environmental Policy
Executive Office of Transportation and Construction
10 Park Plaza, Room 3170
Boston, MA 02116

Robert DiAdamo
Director of Environmental Affairs
Executive Office of Transportation and Construction
10 Park Plaza, Room 3170
Boston, MA 02116

Central Transportation Planning Staff

*Yong B. Chang
Deputy Technical Director
Modeling Activities
Central Transportation Planning Staff
10 Park Plaza, Room 2150
Boston, MA 02116

*Ann McGahan
Central Transportation Planning Staff
10 Park Plaza, Suite 2150
Boston, MA 02116

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Massachusetts Aeronautics Commission

*Sherman Saltmarsh Jr.
Chairman
Mass. Aeronautics Commission
10 Park Plaza, Room 6620
Boston, MA 02116

Massachusetts Bay Transportation Authority

*Robert Prince
General Manager
Mass. Bay Transportation Authority
10 Park Plaza, Room 3910
Boston, MA 02116

Andrew P. Brennan
Manager of Environmental Affairs
Mass. Bay Transportation Authority
10 Park Plaza, Room 3910
Boston, MA 02116

Massachusetts Highway Department

*Matthew J. Amorello
Commissioner
Massachusetts Highway Department
10 Park Plaza, Room 3510
Boston, MA 02116

*Patrick Moynihan
Director
Central Artery/Tunnel Project
Massachusetts Highway Department
One South Station
Boston, MA 02110

*Ronald Kilhan
Environmental Permits Manager
Central Artery/Tunnel Project
Massachusetts Highway Department
One South Station
Boston, MA 02110

Kevin Walsh
MEPA/NEPA Coordinator
Massachusetts Highway Department
10 Park Plaza, Room 4260
Boston, MA 02116

Massachusetts Historical Commission

*Judith McDonough
Executive Director
Massachusetts Historical Commission
State Archives Building
220 Morrissey Blvd.
Boston, MA 02125

Massachusetts Turnpike Authority

*Chairman
Massachusetts Turnpike Authority
10 Park Plaza, Room 4160
Boston, MA 02116

*Michael Lewis
Director
Central Artery/Tunnel Project
Massachusetts Turnpike Authority
185 Kneeland Street
Boston, MA 02110

Peter Pendergast
General Counsel
Massachusetts Turnpike Authority
10 Park Plaza, Room 5170
Boston, MA 02116

*Robert Ruzzo
General Counsel
Massachusetts Turnpike Authority
10 Park Plaza, Room 5170
Boston, MA 02116

Metropolitan Planning Organization

*Luisa Paiewonsky
Executive Secretary, Boston MPO
c/o Bureau of Transportation Planning & Development
Executive Office of Transportation and Construction
10 Park Plaza, Room 2150
Boston, MA 02116

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Massachusetts Water Resources Authority

Douglas McDonald
Executive Director
Mass. Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Charlestown, MA 02129

Massachusetts Port Authority Board of Directors

Mark E. Robinson
Board Chairman
Massachusetts Port Authority
One Harborside Drive
East Boston, MA 02128-2909

John Cogliano Jr.
Board Member
Massachusetts Port Authority
One Harborside Drive
East Boston, MA 02128-2909

Lois J. Catanzaro
Board Member
Massachusetts Port Authority
One Harborside Drive
East Boston, MA 02128-2909

John F. Monahan
Board Member
Massachusetts Port Authority
One Harborside Drive
East Boston, MA 02128-2909

Lucy A. Flynn
Board Member
Massachusetts Port Authority
One Harborside Drive
East Boston, MA 02128-2909

James M. Coull
Administration
Massachusetts Port Authority
One Harborside Drive
East Boston, MA 02128-2909

George W. Cashman
Board Member
Massachusetts Port Authority
One Harborside Drive
East Boston, MA 02128-2909

Metropolitan Area Planning Council

*Lauren Adair
Metropolitan Area Planning Council
60 Temple Place, F16
Boston, MA 02111

David Soule
Executive Director
Metropolitan Area Planning Council
60 Temple Place
Boston, MA 02111

Regional Transportation Offices

Connecticut

Rick Lamport
Airport Manager
Tweed-New Haven Airport
155 Burr Street, 2nd Floor
New Haven, CT 06512

*Kevin Lynch
Connecticut DOT
2800 Berlin Turnpike
Newington, CT 06111

Ken Robert
Connecticut DOT
2800 Berlin Turnpike
Windsor Locks, CT 06096

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Maine

*Ronald L. Roy
Maine DOT
16 State House Station
Augusta, ME 04333-0016

Jeffrey Schultes
Airport Manager
Portland Airport
1001 Westbrook Street
Portland, ME 04102

Bob Zieglaar
Airport Manager
Bangor Airport
287 Godfrey Boulevard
Bangor, ME 04401

Massachusetts

Robert Mallard
Massachusetts Aeronautics Commission
10 Park Plaza, Suite 6620
Boston, MA 02116

*Alvin S. Topham
Chairman
Nantucket Planning and Economic Development Commission
1 East Chestnut Street
Nantucket, MA 02554

*Ms. Katherine Stronjy, Chairman
Barnstable Municipal Airport
Boardman-Polando Field
480 Barnstable Road – 2nd Floor
Hyannis, MA 02601

Eric Waldron
Airport Manager
Worcester Airport
375 Airport Drive
Worcester, MA 01610

New Hampshire

*Jack Ferns
New Hampshire DOT
65 Airport Road
Concord, NH 03001-5298

Kevin Dillon
Airport Director
Manchester Airport
One Airport Road – Suite 300
Manchester, NH 03103-3395

Rhode Island

Michael Cheston, A.A.E.
Executive Director
Rhode Island Airport Corporation
2000 Post Road
Warwick, RI 02886

Wayne Schuster
T.F. Green Airport
Rhode Island Airport Corporation
2000 Post Road
Warwick, RI 02886

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Vermont

*J.J. Hamilton
Airport Manager
Burlington Airport
1200 Airport Drive, #1
Burlington, VT 05403

Rich Turner
Aviation Program Manager
State of Vermont, Agency of Transportation
National Life Building
Drawer 33
Montpelier, VT 05633-5001

Community Representatives

Airside Review Committee (ARC) Members

Dovi Abbey
4 Humboldt Avenue
Roxbury MA 02119

Paul Ballantine
100 Boatswain Way
Chelsea, MA 02150

Claudia Clifford
475 Harland Street
Milton, MA 02186

Thomas J. Connelly
77 Farragut Road
South Boston, MA 02127

Robert D'Amico
Boston Transportation Department
One City Hall Plaza, Room 721
Boston, MA 02201

Dan Dwyer
201 Wampatuck Road
Hingham MA 02043

Richard Easler
Cambridge City Planning Department
57 Inman Street
Cambridge, MA 02139

Jerome Falbo
80 Jefferson Street
Winthrop, MA 02152

Ron Fama
11 Saint Annes Road
Weymouth MA 02189

William Galvin
49 Monument Square Apt. 1
Charlestown, MA 02129

Alex Geourntas
c/o Office of City Councilor Dan Conley
One City Hall Plaza, 5th Floor
Boston, MA 02201

Joseph Gulino
25 Apple Hill Road
Melrose, MA 02176

Arthur Hartett
262 West Third Street
South Boston, MA 02127-1339

Carl Kimmich
ALPA
23 Swan Street
Pawcatuck, CT 06379

Jim Klocke
Greater Boston Chamber of Commerce
One Beacon Street
Boston, MA 02108-3114

Sandra Kunz
Braintree Representative
89 Hollingsworth Avenue
Braintree, MA 02184

Steve Lathrop
14 Western Avenue
Hull, MA 02045-1102

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Anastasia S. Lyman
Jamaica Plain/Runway 27 Coalition, Inc.
18 Greenough Avenue
Jamaica Plain, MA 02130

Bernice Mader
Quincy Representative
108 Connell Street
Quincy, MA 02129

John Mahoney
Malden Representative
11 Nanapashemet Avenue
Malden, MA 02149

Wayne Matewsky
Everett Representative
86 Lewis Street
Everett, MA 02149

*Debbie McHatton
Beachmont/Revere Representative
89 Leverett Avenue
Beachmont, MA 02151

*Glenn Morse
Continental Airlines
38 New Hampshire Avenue
Massapequa, NY 11758

*Ray Murphy
Palmer & Dodge
One Beacon Street
Boston, MA 02108

*Rol Murrow
AOPA
33 Holly Drive
Storrs, CT 06268-22065

*John O'Brien
Cape Cod Economic Development Council
Barnstable Municipal Airport
480 Barnstable Road
Hyannis, MA 02601

Daniel Dray
Administrator
Cape Cod Economic Development Council
Barnstable Municipal Airport
480 Barnstable Road
Hyannis, MA 02601

John O'Brien
ALPA
535 Herndon Parkway
Herndon, VA 22070-1169

Daryl Pomicter
Beacon Hill Representative
136 Myrtle Street
Boston, MA 02114

*William Reynolds
Business Express Airlines, Inc.
55 Washington Street, Suite 300
Dover, NH 03820

*Christopher Ryan
Brookline Town Hall Planning Department
333 Washington Street
Brookline, MA 02145-6863

Pamela Smith
Dorchester Representative
One Barma Road
Dorchester, MA 02124

David Standley (Consultant)
4 Spillers Lane
Ipswich, MA 01938

Allison Stieber
14 Wyatt Street
Somerville, MA 02143-3950

Ron Taylor
41 Baldwin Street
Charlestown, MA 02129-1706

*Christie Wrigley
Somerville Representative
93 Highland Avenue
Somerville, MA 02143

*Gail Visentin
Director Passenger & Cargo Operations
British Airways
Boston-Logan International Airport
East Boston, MA 02128

Kurt Walter
South End/Cambridge Representative
30A Arlington Street
Cambridge, MA 02140

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Richard Wehby
West Roxbury Representative
447 Weld Street
West Roxbury, MA 02132

*Larry Zabar
New England Council
98 North Washington Street
Boston, MA 0211

Massport Citizen Advisory Commit tee (CAC)

*Hank Botte
33 Szwaliwoods Road
Melrose, MA 02176

*Thomas Connolly
South Boston Representative
77 Farragut Road
South Boston, MA 02127

*Mary Davis
9272 Cascade Street
Detroit, Ml 48204-1714

*Robert Fornier
111 Ridgewood Road
Milton, MA 02186

*Arthur Hartnett
262 West 3rd Street
South Boston, MA 02127

Blossom Hoag
Friends of Belle Isle Marsh
177 Webster Street
East Boston, MA 02128

*Joseph Hubbard
39 Hobart Avenue
Braintree, MA 02184

*Rita Hurley
15 McKane Street
Dorchester, MA 02122

*Paul Katzeff
Hull Board of Selectmen
Hull, MA 02045

*Joseph McDermott
15 Rosaria Street
Dorchester, MA 02122

Brian Miller
109 O Street
South Boston, MA 02127

Elvira Pixie Palladino
East Boston Piers PAC
759 Bennington Street
East Boston, MA 02128

*Kathy Santiano
15 Washington Square
Beachmont, MA 02151

*Allison Stieber
14 Wyatt Street
Somerville, MA 02143

*Ron Taylor
41 Baldwin Street
Charlestown, MA 02129

Mona Thaler
22 Cushing Road
Brookline, MA 02445

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Municipalities

Barnstable

Community / Interest Groups

Christine Dolen
Commissioner Chairman
Barnstable County Commissioners
3195 Main Street
Barnstable, MA 02630

Daniel Dray
Administrator
Cape Cod Economic Development Council
3225 Main Street
Barnstable, MA 02630

Herbert Olsen
Commission Chairman
Cape Cod Commission
3225 Main Street
Barnstable, MA 02630

Boston

Elected Officials

Mayor's Office

*Honorable Thomas M. Menino, Mayor
City of Boston
One City Hall Square
Boston, MA 02201

Mr. Anthony Petrucelli
Mayor's Office of Neighborhood Services,
Room 708
1 City Hall Square
Boston, MA 02201

City Council

*Daniel F. Conley
District Councilor
Boston City Council
Boston, City Hall
Boston, MA 02201

*Maureen E. Feeney
District Councilor
Boston City Council
Boston, City Hall
Boston, MA 02201

*Michael F. Flaherty
District Councilor
Boston City Council
Boston City Hall
Boston, MA 02201

*Maura A. Hennigan
District Councilor
Boston City Council
Boston, City Hall
Boston, MA 02201

*Brian J. Honan
District Councilor
Boston City Council
Boston, City Hall
Boston, MA 02201

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*James M. Kelly
President
Boston City Council
Boston, City Hall
Boston, MA 02201

*Peggy Davis-Mullen
Councilor-At-Large
Boston City Council
Boston, City Hall
Boston, MA 02201

*Stephen J. Murphy
Councilor-At-Large
Boston City Council
Boston, City Hall
Boston, MA 02201

*Francis M. Roache
Councilor-at-Large
Boston City Council
Boston, City Hall
Boston, MA 02201

*Michael Ross
District Councilor
Boston City Council
Boston, City Hall
Boston, MA 02201

*Paul J. Scapicchio
District Councilor
Boston City Council
Boston, City Hall
Boston, MA 02201

*Charles Turner
District Councilor
Boston City Council
Boston, City Hall
Boston, MA 02201

*Charles C. Yancey
District Councilor
Boston City Council
Boston, City Hall
Boston, MA 02201

Municipal Agencies

Boston Air Pollution Control Commission

Bryan Glascock
Director
Boston Air Pollution Control Commission
One City Hall Square, Room 805
Boston, MA 02210

Boston Conservation Commission

Richard McGuinness
Executive Secretary
Boston Conservation Commission
One City Hall Square, Room 805
Boston, MA 02201

Boston Environmental Department

Antonia Pollak
Director
Boston Environmental Department
One City Hall Square, Room 805
Boston, MA 02201

Boston Parks and Recreation Department

*Justine M. Liff
Commissioner
Boston Parks and Recreation Dept.
1010 Massachusetts Avenue
Boston, MA 02118

Boston Public Health Commission

John Auerbach
Executive Director
Boston Public Health Commission
1010 Massachusetts Avenue
Boston, MA 02118

Boston Redevelopment Authority

*Mark Maloney
Director
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Richard Mertens
Director of Special Project Planning
Boston Redevelopment Authority
One City Hall Square, Room 959
Boston, MA 02201

Boston Transportation Department

*Andrea d'Amato
Commissioner
Boston Transportation Department
One City Hall Square, Room 721
Boston, MA 02201

Robert D'Amico (ARC)
Boston Transportation Department
One City Hall Square, Room 721
Boston, MA 02201

Boston Water and Sewer Commission

John Lopes
Executive Director
Boston Water and Sewer Commission
425 Summer Street
Boston, MA 02210-1700

*Vincent G. Mannering
Executive Director
Boston Water and Sewer Commission
425 Summer Street
Boston, MA 02210-1700

City Clerk's Office

*Rosaria Salerno
Boston City Clerk
One City Hall Square
Boston, MA 02201

Community/Interest Groups

*Valerie Burns
Director
Boston Nat. Areas Fund, Inc.
59 Temple Place, Room 558
Boston, MA 02111-1307

*Peter Y. Flynn
Vice Chairman
Neighborhood Association of the Back Bay, Inc.
337 Newbury Street
Boston, MA 02115-2710

*Richard Kennelly, Jr.
Conservation Law Foundation
62 Summer Street
Boston, MA 02116

*Ms. Shirley Kressel, President
Alliance of Boston Neighborhoods
Harriet Tubman House
566 Columbus Avenue
Boston, MA 02118

*Vivien Li
Executive Director
The Boston Harbor Association
374 Congress Street, Suite 609
Boston, MA 02210-1807

*Jay McCaffrey
Executive Director
Sierra Club
100 Boylston Street, Suite 760
Boston, MA 02116

*Peter Meade
New England Council
98 North Washington Street
Boston, MA 02199

*Mr. James Miller
MetroPlan Committee Chair
Metropolitan Area Planning Council
60 Temple Place
Boston, MA 02111

*Sandra C. Steele, President
Beacon Hill Civic Association, Inc.
74 Joy Street
Boston, MA 02114

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Bolton

*Nancy W. Reed
Director
Advocates for a Strong Economy w/Resp. Trans.
(ASERT)
Randall Road
Bolton, MA 01740

Cambridge

Municipal Agencies

City Clerk

*D. Margaret Drury
City Clerk
Office of the City Clerk
City of Cambridge
City Hall – 795 Massachusetts Avenue
Cambridge, MA 02139

City Manager

*Robert W. Healy
City Manager
City of Cambridge
Cambridge, MA 02139

Charlestown

Community/Interest Groups

*Carol Bratley
President
Charlestown Business Association
3 Pleasant Street Ct.
Charlestown, MA 02129

*Ms. Margaret Bradley, President
Charlestown Business Association
55 Park Street
Charlestown, MA 02129

*Mr. Dan Haska
c/o Charlestown Preservation Society
P.O. Box 201
Charlestown, MA 02129

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Chelsea

Elected Officials

City Council

*Mr. Roy Avellaneda
Councilor, District 7
500 Broadway
Chelsea, MA 02170

*Rochelle M. Bennett
Councilor
7 Boatswains Way
Chelsea, MA 02150

*Calvin T. Brown
Councilor, District 7
500 Broadway
Chelsea, MA 02150

*Preston G. Galarneau Jr.
Councilor District 8
Chelsea City Council
City Hall – 500 Broadway
Chelsea, MA 02150

*Paul Nowicki
Councilor-At-Large
500 Broadway
Chelsea, MA 02150

Mr. John O'Brien
Councilor at Large
14 Reynolds Avenue
Chelsea, MA 02150

Ms. Marilyn Portnoy
Councilor, District 5
61 Cottage Street
City Hall – 500 Broadway
Chelsea, MA 02150

*Stephen Powers
Councilor, District 3
17 Louis Street
Chelsea, MA 02170

*Richard Repici Jr.
Councilor, District 5
61 Cottage Street
Chelsea, MA 02170

*Arthur J. Richards
Councilor, District 2
21 Jefferson Avenue
Chelsea, MA 02170

*Stanley Troisi
Councilor, District 1
108 Springvale Avenue
Chelsea, MA 02150

*Mike McKonnen Tsegaye
Councilor, District 4
21 County Road
Chelsea, MA 02150

*Juan Vega
Councilor, District 6
Chelsea City Council
500 Broadway
Chelsea, MA 02150

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Municipal Agencies

*Jay Ash, Director
City Manager
Chelsea City Hall
500 Broadway
Chelsea, MA 02150

City Clerk

*Robert Bishop
City Clerk
Chelsea City Hall
500 Broadway
Chelsea, MA 02150

Board of Selectmen

Guy A. Santagate
City Manager
Chelsea City Hall
500 Broadway
Chelsea, MA 02150

Conservation Commission

*John Depriest
Chelsea Conservation Commission
500 Broadway, Room 101
Chelsea, MA 02150

*Charles L. McFarland
Chairman
Chelsea Conservation Commission
Chelsea City Hall
500 Broadway
Chelsea, MA 02150

Community/Interest Groups

*Jeffrey Buck
President
Chelsea Waterfront Association
12 Medford St.
Chelsea, MA 02150

*Michael Falzone, President
Chelsea Rotary
8 Central Avenue
Chelsea, MA 02150

*Edward Marakovitz
Chelsea Human Services Collaborative
300 Broadway
Chelsea, MA 02150

*Bruce Mauch
President
Chelsea Chamber of Commerce
285 Everett Avenue
Chelsea, MA 02150

*Waldert Rivera
Executive Director
Centro Hispano de Chelsea
248 Broadway
Chelsea, MA 02150

*Gladys Vega
Chelsea Greenspace
c/o Chelsea Human Services Collaborative
300 Broadway
Chelsea, MA 02150

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

East Boston

Community/Interest Groups

*Lisa Capagrico
East Boston Chamber of Commerce
296 Bennington Street
East Boston, MA 02128

*Debra H. Cave
Chairperson
East Boston Healthy Boston Coalition
106 White Street
East Boston, MA 02128

*Alice Christopher
972 Bennington Street
East Boston, MA 02128

*Philip Freehan, Chairman
Economic Development Council
East Boston Savings Bank
10 Meridian Street
East Boston, MA 02128

*Dean Hashimoto
East Boston Neighborhood Health Center
153 Worcester Road
Newton, MA 02158

*Roberta Horn
65 St. Andrews Road
East Boston, MA 02128

Ida Lamattina, President
Gove Street Citizens Committee
123 Cottage Street
East Boston, MA 02128

*Albert D. Lavoie, Jr.
6 Everett Ct.
East Boston, MA 02128

*Robert Loiacono
East Boston Chamber of Commerce
c/o Welding & Engineering Company
279 Border Street
East Boston, MA 02128

*William Longfield
201 Webster Street
East Boston, MA 02128

*George Loring
Bremen Street Park Site Committee
237 Marion Street
East Boston, MA 02128

*Karen Maddalena, Chairperson
Jeffries Point Neighborhood Association
4 Lamson Street
East Boston, MA 02128

*James Manganello
Executive Director
East Boston Community Information and Referral Center
237 Marion Street
East Boston, MA 02128

*David Migliaccio
c/o Salvy the Florist
Eight Chelsea Street
East Boston, MA 02128

*Gail Miller
Chairperson – Conservation Committee
Friends of Belle Island Marsh
P.O. Box 575
East Boston, MA 02128

*Clark Moulaison, President
East Boston Main Streets
c/o American Ice Cream
226 Sumner Street
East Boston, MA 02128

*Peter Nagle
Mayor's Office of Neighborhood Services
1 City Hall Plaza
Boston, MA 02201

*Joseph Plagenza, President
Land Use Council
46 Saratoga Street
East Boston, MA 02128

*Fran Riley
193 Trenton Street
East Boston, MA 02128

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Jack Scalcione, Commander
East Boston Veteran's Council
36 Frankfort Street
East Boston, MA 02128

*John Sepulveda
Latin American Planning & Development
c/o NOAH
28 Paris Street
East Boston, MA 02128

*Robert F. Strelitz
East Boston Land Use Advisory Council
1 Brigham Street Apt. 2
Boston, MA 02128

*Vincent R. Tino
95 Faywood Avenue
East Boston, MA 02128

*Robert Verdonk, President
East Boston Savings Bank
10 Meridian Street
East Boston, MA 02128

Bedford

*Mark Siegenthaler
Selectman, Town of Bedford
Hanscom Area Town Selectman
10 Mudge Way
Bedford, MA 01730

Everett

Municipal Agencies

Mayor's Office

*David Ragucci
Everett City Hall
484 Broadway
Everett, MA 02149

Hingham

Municipal Agencies

Office of the Board of Selectman

*Michael P. Holden
Office of the Selectmen
210 Central Street
Hingham, MA 02043-2757

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Hull

Municipal Agencies

Planning Board

*David P. Carlon
Chairman
Town of Hull, Planning Board
225 Atlantic Avenue
Hull, MA 02045

Board of Selectmen

*Regina Burke
Hull Board of Selectman
Hanscom Area Town Selectman
Atlantic Avenue
Hull, MA 02045

*Philip E. Lemnios
Town Manager
Town of Hull, Board of Selectmen
Municipal Building
Hull, MA 02045

Lexington

*Peter Enrich
Town of Lexington
Hanscom Area Town Selectman
Town Hall
1625 Massachusetts Avenue
Lexington, MA 02173

Milton

Elected Officials

Board of Selectmen

*Richard B. Neely
Chairman
Board of Selectmen
Milton Town Hall
525 Canton Avenue
Milton, MA 02186

Municipal Agencies

Town Clerk

*James G. Mullen, Jr.
Town Clerk
Milton Town Hall
525 Canton Avenue
Milton, MA 02186

*Kimberly I. McCarthy
Town of Milton Airport Noise Committee
c/o Murphy, Hesse, Toomey & Lehane
300 Crown Colony Drive, Suite 410
Quincy, MA 02269-9126

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Nantucket

Elected Officials

Board of Selectmen

*Arthur L. Desrocher
Chairman
Town and County of Nantucket
Board of Selectmen – County Commissioners
Town & Country Building
16 Broad Street
Nantucket, MA 02554

Community/Interest Groups

*Maia Gaillard
Executive Director
Nantucket Island Chamber of Commerce
48 Main Street
Nantucket, MA 02554-3595

Orleans

Elected Officials

Board of Selectmen

*Beverly G. Singleton
Chairman
Town of Orleans – Board of Selectmen
19 School Road
Orleans, MA 02653-3699

Provincetown

Municipal Agencies

Board of Selectmen

*Keith A. Bergman
Town Manager
Town of Provincetown
Town Hall – 260 Commercial Street
Provincetown, MA 02657

Airport Commission

*Chairman
Town of Provincetown –Airport Commission
Race Point Road – P.O. Box 657
Provincetown, MA 02657

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

City of Quincy

Elected Officials

*James A. Sheets
Mayor
Quincy City Hall
1305 Hancock Street
Quincy, MA 02169

City Council

*City Councilor and State Representative
City Council
Quincy City Hall
1305 Hancock Street
Quincy, MA 02169

*Peter Kolson
President
City Council
Quincy City Hall
1305 Hancock Street
Quincy, MA 02169

Municipal Agencies

City Clerk

*Joseph Shea
City Clerk
Quincy City Hall
1305 Hancock Street
Quincy, MA 02169

Revere

Elected Officials

Mayor

*Robert J. Hass, Jr.
Mayor
Revere City Hall
281 Broadway
Revere, MA 02151

City Council

*Councilor Thomas Ambrosino
Revere City Council
Revere City Hall
281 Broadway
Revere, MA 02151

*Councilor Paul Buonfiglio
City Councilor
70B Milano Avenue
Revere, MA 02151

*Councilor George M. Colella
Revere City Council
Revere City Hall
281 Broadway
Revere, MA 02151

*Councilor Joseph A. Delgrosso
City Councilor
813 Broadway
Revere, MA 02151

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Councilor Al Fiore
City Councilor
72 Pearl Avenue
Revere, MA 02151

*Councilor Donald H. Goodwin
City Councilor
350 Beach Street
Revere, MA 02151

*Councilor Arthur F. Guinasso
City Councilor
2 Martin Street
Revere, MA 02151

*Councilor Richard Penta
City Councilor
140 Crest Avenue
Revere, MA 02151

*John Perez
City Councilor
2 Ocean Avenue
Revere, MA 02151

*Councilor Denise Salemi
Revere City Council
Revere City Hall
281 Broadway
Revere, MA 02151

*Councilor Leonard Semenza
Revere City Council
Revere City Hall
281 Broadway
Revere, MA 02151

Municipal Agencies

City Clerk

*John Henry
City Clerk
Revere City Hall
281 Broadway
Revere, MA 02151

Planning and Community Development Department

*Frank Stringi
Revere Planning Department
281 Broadway
Revere, MA 02151

Community/Interest Groups

*Mr. John Addonizio
Board Director
Revere Chamber of Commerce
Fleet National Bank
330 Broadway
Revere, MA 02151

*Mr. Laurel Cifuni
Franklin Park Improvement Association
32 Maple Street
Revere, MA 02151

*Mr. Andy DiPeitro
c/o Community Planning and Development
281 Broadway
Revere, MA 02151

*James Furlong
Roughans Point Association
c/o 12 Pierview Street
Revere, MA 02151

*Elaine Hurley
Pines Riverside Association
c/o 21 River Avenue
Revere, MA 02151

*Joseph James
Friends of Rumney Marsh
10 Rice Avenue
Revere, MA 02151

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Michael Kelleher
Revere Beach Association
681 Revere Beach Boulevard
Revere, MA 02151

*Sheldon Kovitz, President
Point of Pines Beach Association
c/o 53 Delano Avenue
Revere, MA 02151

*Rose LaQuaglia
Oak Island Civic Association
5 Oak Island Road
Revere, MA 02151

*Ben Leone, President
Beachmont Neighborhood Association
96 Bellingham Avenue
Revere, MA 02151

*Laura Leone, Executive Director
Revere Chamber of Commerce
96 Bellingham Avenue
Revere, MA 02151

*John J. Verrengia
CPCA, PC
President, Revere Chamber of Commerce
385 Broadway
Revere, MA 02151

Somerville

Elected Officials

Mayor

*Dorothy Kelly Gay
Mayor
Somerville City Hall
93 Highland Avenue
Somerville, MA 02143

City Clerk

*Arthur B. McCue
City Clerk
City Clerk's Office
Somerville City Hall
93 Highland Avenue
Somerville, MA 02143

Committee on Housing and Community Development

*William A. White, Jr.
Chairman – Committee of Housing & Community Development
City of Somerville – Board of Alderman
16 Browning Road
Somerville, MA 02145

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

South Boston

Community/Interest Groups

*Kathleen Kenneally
President
South Boston Residents' Group, Inc.
588 East Third Street
South Boston, MA 02127

*Edward Wallace
Dorchester Heights Association
56 Thomas Park
South Boston, MA 02127

*Lily Berry
Director, West Broadway Task Force
81 Orton Marotta Way, #1076
South Boston, MA 02127

*Mr. John Ciccone
Director of Information
South Boston Information Center
655 East Broadway St.
South Boston, MA 02127

*Lucky Devlin
South Boston Environmental & Health Coalition
718 East Second Street
South Boston, MA 02127

*Fr. James M. DiPerri
Founder
Committee for Relief from Airport Noise
73 Farragut Road
South Boston, MA 02127

*Linda Doran, President
Andrew Square Civic Association
9 Leed Street
South Boston, MA 02127

*Timothy Hayes, Chair
"M" Street Park Association
23 "M" Street
South Boston, MA 02127

*The Seaport Alliance for a Neighborhood Design
c/o Steve Hollinger
50 Melcher Street
Boston, MA 02210

*Michael O'Dwyer
President
South Boston Citizens' Association
P.O. Box 74
South Boston, MA 02127

*Mr. Kenneth Sinkiewicz
Chairman, South Boston Waterfront Committee
911 Broadway
South Boston, MA 02127

*South Boston Environmental Health Watch
c/o South Boston Public Health Initiative
409 West Broadway
South Boston, MA 02127

*Mr. William Spain
President
Castle Island Assoc.
1514 Columbia Road
South Boston, MA 02127

*Gerald Vierbickas
President
South Boston Public Action Committee
1720 Columbia Road
South Boston, MA 02127

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Squantum

Community/Interest Groups

*Frank Buckley
President
Squantum Community Association
136 Standish Road
Squantum, MA 02171

Winthrop

Elected Officials

Board of Selectmen

*Robert V. Driscoll, Jr. (ARC)
Chairman
Board of Selectman
Winthrop Town Hall
One Metcalf Square
Winthrop, MA 02152

*Matthew D. Lanza (ARC)
Board of Selectman
Winthrop Town Hall
One Metcalf Square
Winthrop, MA 02152

*Gerald Ogus
Board of Selectmen
Winthrop Town Hall
One Metcalf Square
Winthrop, MA 02152

Municipal Agencies

Airport Hazards Commission

*Richard Bangs
Town of Winthrop Noise, Air Pollution, and
Airport Hazards Committee
154 Woodside Avenue
Winthrop, MA 02152

*Arthur Flavin, Sr.
Town of Winthrop Noise, Air Pollution, and
Airport Hazards Committee
Wintrop, MA 02152

Planning Board

*Joseph Borane
Planning Board Member
Town of Winthrop
22 Central Street
Winthrop, MA 02152

*Edward Bomarsi
Winthrop Planning Board
Winthrop Town Hall
One Metcalf Square
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Joseph Dow
Town of Winthrop
Planning Board Member
31 Beal Street
Winthrop, MA 02152

*Mary McGrall
Town of Winthrop
Planning Board Member
186 Bartlett Road
Winthrop, MA 02152

*Davis Proctor, Jr.
Town of Winthrop
Planning Board Member
100 Grovers Avenue
Winthrop, MA 02152

*David Schonback
Town of Winthrop
Planning Board Member
39 Waldemar Avenue
Winthrop, MA 02152

Noise, Air Pollution and Airport Hazards Commission

*Jerome Falbo
Town of Winthrop Noise, Air Pollution and Airport Hazards Comm.
80 Jefferson Street
Winthrop, MA 02152

Conservation Commission

*Mary Kelley
Chairperson
Winthrop Conservation Commission
Winthrop Town Hall
One Metcalf Square
Winthrop, MA 02152

Office of the Board of Selectmen

*Virginia Wilder
Executive Secretary
Board of Selectmen
Winthrop Town Hall
Winthrop, MA 02152

Chamber of Commerce

*Winthrop Chamber of Commerce
207 Hagman Road
Winthrop, MA 02152-0005

Community/Interest Groups

*Richard D. Dimes
Winthrop Hazards Committee
105 Johnson Avenue
Winthrop, MA 02152

*Caroline Fisichella
Winthrop Concerned Citizens' Comm.
99 Johnson Avenue
Winthrop, MA 02152

*Conal Foley, President
Friends of Belle Isle Marsh
97 Lowell Road
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Other Interested Parties

Billerica

*Wendy Peters
Travel Manager
PRI Automation
805 Middlesex Turnpike
Billerica, MA 01821-3986

Boston

*Steve Boudreau
Vollmer Associates
38 Chauncy Street, 3rd Floor
Boston, MA 02111

*Elizabeth S. Boveroux
President
ELLIS Neighborhood Association, Inc.
55 Appleton Street Apt. 1
Boston, MA 02116

*Kenneth P. Brier
Sherburne, Powers, Holland & Knight LLP
One Beacon Street
Boston, MA 02108

*Stephen H. Burrington
General Counsel
Conservation Law Foundation
62 Summer Street
Boston, MA 02110-1016

*Mr. Mark R. Cestari
President
New England USA
52 Eliot Street
Boston, MA 02116

*Mr. S. James Coppersmith
Chairman, Board of Trustees
Emerson College
100 Beacon Street
Boston, MA 02116-1596

*Nader F. Darehshori
Chairman
Massachusetts Business Roundtable
250 Boylston Street
Boston, MA 02116

*Mr. John F. Deacon
Transportation Chair
Sierra Club

Greater Boston Group
3 Joy Street
Boston, MA 02108
*

Mr. Sean Donohue
City Manager
United Airlines
61 Harborside Drive
East Boston, MA 02128

*Mr. Ed Eskandariah
Arnold Fortuna Lawner & Cabot, Inc.
101 Arch Street
Boston, MA 02110

*Shawn P. Ford
V.P. International & Domestic Sales
Old Town Trolley Tours
52 Eliot Street
Boston, MA 02116

Douglas Foy
Executive Director
Conservation Law Foundation
62 Summer Street
Boston, MA 02110

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*David Gibbons
General Manager
Swissotel
One Avenue de Lafayette
Boston, MA 02111

*K. Dun Gifford, President
Comm. for Regional Transportation
15 Hilliard
Cambridge, MA 02138

*John W. Gillespie
Managing Director
Bear, Stearns & Co. Inc.
One Federal Street
Boston, MA 02110

*Neal Glick
Craighead/Glick LLP
227 Dartmouth Street, 3rd Floor
Boston, MA 02116

*Michael J. Haroz
Goulston & Storrs
400 Atlantic Avenue
Boston, MA 02110-3333

*Gary T. Klencheski
President and CEO
Fitcorp
800 Boylston Street
Prudential Center Suite 2475
Boston, MA 02199

Peter L. Koff
McGowan, Engel, Tucker Garrett & Schultz
125 High Street, Suite 2601
Boston, MA 02110

*Mr. Thomas J. May
President and Chief Executive Officer
Boston Edison
800 Bolyston Street
Boston, MA 02199

*Ray Molinaro
President, Greater Boston Chamber Member
Back Bay Photo Imaging
800 Boylston Street
Boston, MA 02199

Patrick B. Moscaritolo
President and CEO
Boston Convention & Visitors Bureau
Two Copley Place, Suite 105
Boston, MA 02116-6501

*Bill Munck
General Manager
Boston Marriott Copley Place
110 Huntington Avenue
Boston, MA 02116

*Joseph W. Nigro, Jr.
General Agent/Secretary
Building and Construction Trades Council of the Metropolitan District
645 Morrissey Blvd., Suite 2
Boston, MA 02122-3520

*Mr. Francois L. Nivaud
Managing Director
Boston Harbor Hotel
70 Rowes Wharf
Boston, MA 02110

*Mr. Kevin Phelan
Chairman
Greater Boston Chamber of Commerce
One Beacon Street
Boston, MA 02108

*Mr. Don Reed
President
NYNEX
185 Franklin Street
18th Floor
Boston, MA 02110

*Rob Sargent
Legislative Director
MASSPIRG
29 Temple Place
Boston, MA 02111-1350

*Mr. Gary L. Saunders
Chairman & Chief Executive Officer
Saunders Hotel Group
64 Arlington Street
Boston, MA 02116-3912

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Bill Skoglund
General Manager
Boston Marriott Copley Place
110 Huntington Avenue
Boston, MA 02116

*Terry Wordon
General Manager
Boston Marriott Long Wharf
296 State Street
Boston, MA 02108

*Mr. Arthur O. Stern
Executive Vice President
The Colonial Group, Inc.
One Financial Center
Boston, MA 02111

*Wally Stevens
President
Slade Gorton & Co., Inc.
225 Southampton Street
Boston, MA 02118-2715

*Jodi Sugarman
Save the Harbor Save the Bay
25 West Street, 4th Floor
Boston, MA 02111

*Charles K. Tufts
Tufts Associats
1208 VFW Parkway – Suite 300
Boston, MA 02132

*Mr. William C. Van Fassen
President and Chief Executive Officer
BlueCross BlueShield of Massachusetts
100 Summer Street
Boston, MA 02110-2190

*David C. Weinstein
Chief of Administration and Gov't. Affairs
Fidelity Investments
82 Devonshire Street – F5A
Boston, MA 02109-3614

*Mr. Jon Westling
Boston University
145 Bay State Road
Boston, MA 02215

*Mr. David M. Ziolkowski
Regional Vice President
Hudson Aviation Services, Inc.
100 Cambridge Street - 20th Floor
Boston, MA 02202

Cambridge

*Claire Barrett
Claire Barrett & Associates
700 Massachusetts Avenue
Cambridge, MA 02139

*Tom Connery
Roseland Property Co.
125 Cambridge Park Drive
Cambridge, MA 02140

*Mr. John Gorman, President
Opinion Dynamics Corporation
1030 Massachusetts Avenue
Cambridge, MA 02138-5335

*Mr. Jeff Miller
General Manager
Boston Marriott- Cambridge
Two Cambridge Center
Cambridge, MA 02142

*John T. O'Connor
President
c/o Green Works, Inc.
160 Second Street
Cambridge, MA 02142

*Michael A. Sandman
Sr. Vice President
Fuld & Company Inc.
126 Charles Street – Suite 2
Cambridge, MA 02141-2130

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Charlestown

*Arthur Krolman, CFA, President
Krolman Corporation
65 Elm Street
Charlestown, MA 02129-2438

Chelsea

*Allen Alpert
Rotary Board
Square Cab Co.
P.O. Box 505214
Chelsea, MA 02150

*Mark Szretto, Chairperson
Commission of Hispanic Affairs
187 Winnismmett Street
Chelsea, MA 02150

Chestnut Hill

*Mr. Fred Treseler
President
TRACS, INC.
79 Manet Road
Chestnut Hill, MA 02167

Concord

*Chester G. Atkins
Director
ADS Ventures, Inc.
1540 Monument Street
Concord, MA 01742-5303

*Gary Clayton
57 Hill Street
Concord, MA 01742

Cummaquid

*Frank Gibson
New England's Economy Depends on Logan
Harbor Point Rd.
Cummaquid, MA 02637

East Boston

*Lucy Ferullo
23 Haynes Street
East Boston, MA 02128

*Patty Sartori, President
East Boston Health Center, Board of Directors
228 Webster Street
East Boston, MA 02128

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Gardner

*Michael F. Ellis
President and CEO
Greater Gardner Chamber of Commerce
210 Main Street
Gardner, MA 01440

Hyannis

Daniel A. Wolf
President
Cape Air/Nantucket Airlines
Barnstable Municipal Airport – North Ramp
Hyannis, MA 02601

*Charles Carrera
Cape Air/Nantucket Airlines
Barnstable Municipal Airport – North Ramp
Hyannis, MA 02601

Jamaica Plain

*Martha
President
The Franklin Park Coalition
P.O. Box 2333
Jamaica Plain, MA 02130

Lincoln

*E. Heidi Roddis
Environmental Policy Specialist
Massachusetts Audubon Society
208 South Great Road
Lincoln, MA 01773

*Sara Mattes
Selectman, Town of Lincoln
Hanscom Area Town Selectman
10 Meadow Dam Road
Todd Pond
Lincoln, MA 01773

Malden

*Louis A. Mandarini Jr.
Business Manager
Construction and General Laborers' Union Local 22
280 Medford Street
Malden, MA 02148

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Newton

*David I. Begelfer
Executive Director
NAIOP
2150 Washington Street – Suite 200
Newton, MA 02462

*Paul V. Puzzanghero
General Manager
Boston Marriott Newton
Commonwealth Avenue at Route 128 and the Massachusetts Turnpike
Newton, MA 02466

Peabody

*Terry Worden
General Manager
Peabody Marriott
8A Centennial Drive
Peabody, MA 01960

Provincetown

*Gary Reinhardt
President
Provincetown Business Guild
29 Tremont St.
Provincetown, MA 02657

Rosindale

*William P. Ryan
Business Manager
Int'l. Union of Operating Engineers – Local 4
120 Mount Hope Street
Roslindale, MA 02131

South Boston

*Mona Connolly
South Boston Chamber of Commerce
485 East Broadway
South Boston, MA 02127

*Robert Costello
Chairman, St. Vincents' Assoc.
211 West Third Street
South Boston, MA 02127

*Maryann Crush
Chair, South Boston Betterment Trust
917 East Broadway
South Boston, MA 02127

*Ms. Rosemary Powers
South Boston Main Streets Inc.
463 W. Broadway
South Boston, MA 02127

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*William Stoddard
Executive Director, South Boston PAL
60 Bolton St.
South Boston, MA 02127

*Paul V. Walsh
Secretary-Treasurer
Principal Executive Officer
Excavating & Building Material Teamsters, Chauffeurs & Helpers
Local Union 379
29 Farragut Road
South Boston, MA 02127

Waltham

*Howard P. Foley
President
Massachusetts High Technology Council
1601 Trapelo Road
Waltham, MA 02154

Winthrop

*William Hayes
Vice President
North Shore Rec. Center
40 River Road
Winthrop, MA 02152

*Tony Marmo
President
North Shore Recreation Center
40 River Road
Winthrop, MA 01252

* Mr. Thomas J. McCarthy
McCarthy, Allegretto & McCarthy
Attorneys at Law
80 Jefferson Street
Winthrop, MA 02152

Woburn

*Joseph M. Quilty
President
Iron Workers District Council of New England
444 Washington Street
Woburn, MA 01801

*Mr. Robert K. Sheridan
President
The Savings Bank Life Insurance
One Linscott Road
Woburn, MA 01888

Other U S Cities

*Ross B. Capon
National Association of Railroad Passengers
900 Second Street, N.E. – Suite 308
Washington, DC 20002-3557

*Dennis Roberts
Vice President, Technical Director
Government and Technical Affairs
Aircraft Owners and Pilots Association
421 Aviation Way
Frederick, MD 21701-4798

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*William E. Gehman
Chairman
National Association of State Aviation ERS Officials
8401 Colesville Road – Suite 505
Silver Spring, MD 20910-3349

Jim Muldoon
1105 Riverview Drive
Brielle, NJ 08730

*Scott Durgin
Business Express Airlines, Inc.
14 Aviation Avenue
Portsmouth, NH 03801-2833

*Tim Snow
Continental Airlines
1600 Smith Street
Houston, TX 77002

*Leah Raney
Continental Airlines
1600 Smith Street
Houston, TX 77002

*Robert A. Hazel
Vice President, Properties and Facilities
US Airways
2345 Crystal Drive
Arlington, VA 22227

Organizations and Companies

*John Allen
Boston Area Bicycle Coalition
Seven University Park
Waltham, MA 02154

*Barry Andelman
President
Association for Public Transportaiton, Inc.
P.O. Box 1029
Boston, M 02205

*John E. Drew
President
World Trade Center
Boston, MA 02210

*Scott Durgin
Business Exp. Airlines
14 Aviation Avenue
Portsmouth, NH 03801

*John Gould
President and CEO
Associated Industries of Massachusetts
222 Berkeley Street
Boston, MA 02117-0763

*Donald MacIver
Massachusetts Association of Cons. Comm.
10 Juniper Road
Belmont, MA 02178

*Peter Nagle
Revere Journal
327 Broadway
Revere, MA 02151

*Mike Cantalupa
Boston Properties
Eight Arlington Street
Boston, MA 02116

*Richard K. Domas
Hoyle, Tanner & Associates, Inc.
45 Bromfield Street, 10th Floor
Boston, MA 02108

*Patricia Todisco
Greenspace Alliance
Executive Director
36 Bromfield Street, Room 201
Boston, MA 02108

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Private Citizens

Boston

Duane Andrews, RN
85 Appleton Street
Boston, MA 02116

*Mr. John Archibald
40 Union Park
Boston, MA 02118

*Mr. David A. Banta and Caroline E. Coggeshall
158 West Canton Street
Boston, MA 02118

*Mr. David Bartol
15 Dartmouth Place, #3
Boston, MA 02116

*Ms. Claudia Brede
15 Blackwood Street, #4
Boston, MA 02115

*Mr. John Burk
26 Worcester Street
Boston, MA 02118

*Henry Carson
4 Clarendon Street
Boston, MA 02116-6117

*Mr. Barry B. Corden
119 Pembroke Street, #3
Boston, MA 02118

*Peter Cucchiara
60 St. Andrew Rd.
Boston, MA 02128

*Mr. Michael Dukakis
Northeastern University
Departmentof Political Science
303 Meserve Hall
Boston, MA 02115

*Mr. Irv Englander
131 West Concord Street
Boston, MA 02118

*Mr. Brian Gallagher
11 Stedman Street, #1
Boston, MA 02130

*Nina Garfinkle
7 Holyoke Street
Boston, MA (south end)

*S. Kay Gibbs
61 Rutland Street
Boston, MA 02118

*Mr. Sterling Giles
154 West Newton Street
Boston, MA 02118-1203

*Robert and Kathleen Hathaway
220 West Canton Street
Boston, MA 02116-5814

*Ms. Ann Hershfang
Transportation Consultant
64 West Rutland Square
Boston, MA 02118

*Mr. Steve Hollinger
SAND
50 Melcher Street
South Boston, MA 02210

*Mr. John P. Kilroy Jr.
78 Warren Avenue, #202
Boston, MA 02116-6152

*Gordon King
Rackemann Environmental
185 Kneeland Street
Boston, MA 02111

*Nancy Lancellotti
Central Artery/Tunnel Project
185 Kneeland Street
Boston, MA 02111

George McLaughlin
4 Clarendon Street
Boston, MA 02116-6117

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Ron Morgese
65 Breakwater Drive
Boston, MA 02150

*John O'Connor
12 Milford Street
Boston, MA 02118

*Ms. Christine A. O'Toole
3 Greenough Park
Boston, MA 02130

*Mr. Darryl Pomicter
136 Myrtle Street
Boston, MA 02114-4403

*Ms. Melissa Sciter
78 Warren Avenue
Boston, MA 02116

*Ms. Beverly Sky
36 Upton Street
Boston, MA 02118

*John Stewart
34 Rutland Square
Boston, MA 02118

Mr. Vincent R. Tino
95 Faywood Avenue
Boston, MA 02128

*Rebecca Swope
4 Clarendon Street
Boston, MA 02116-6117

*Mark E. Warren
174 Princeton Street
Boston, MA 02128

*Ms. Ellen Winkler
4 Clarendon Street
Boston, MA 02116-6117

*Mr. Robert Wynne
4 Rutland Square
Boston, MA 02118-3105

*Ms. Edwina Yezierski
310 Columbus Avenue
Boston, MA 02116

Cambridge

*Debra Biba and Rob Everts
20 Newell Street
Cambridge, MA 02140

*Mr. Brian Culver
385 Concord Avenue
Cambridge, MA 02138

*Mr. David Foss
c/o Harvard University Press
79 Garden Street
Cambridge, MA 02138-1499

*Dan Lundgren
c/o Lundgren Management Group
15 Everett Street
Cambridge, MA

*Ann Rodney
4 Newport Rd. #5
Cambridge, MA 02140
Frederick Salvucci
77 Massachusetts Avenue, Room I-176
Cambridge, MA 02139

*Nicole Wescott
296 Hurley St.
Cambridge, MA 02141

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Charlestown

*Ms. Sue Holaday
Navy Yard Neighborhoood Association
5401 Eighth Street
Charlestown, MA 02129

*Peter Looney, Chairman
Charlestown Neighborhood Council
338A Main Street
Charlestown, MA 02129

*Mr. William McCabe
269 Bunker Hill Street
Charlestown, MA 02129

Chelsea

*Ms. Elizabeth A. Aberg
22 Boatswains Way
Chelsea, MA 02150

*Adrean Abrams
47 Gardner St.
Chelsea, MA 02150

*Mr. Peter Alachi
22 Boatswains Way
Chelsea, MA 02150

*Aluise
8 Admirals Way
Chelsea, MA 02150

*William Bailey
12 Breakwater Cove
Chelsea, MA 02150

*Rochelle Bennett
7 Boatswain's Way
Chelsea, MA 02150

*Marlo E. and Joan Benton
10 Forsyth St. Apt # 306
Chelsea, MA 02150

*Esther Berkowitz
100 Boatswains Way Apt. # 208
Chelsea, MA 02150

*Paul Bernstein
8 Ferry St.
Chelsea, MA 02150

*Domenic Bitto
7 Beacon St.
Chelsea, MA 02150

*WR Black
6 Ferry Street
Chelsea, MA 02150

*Joyce Black
Admirals Hill
Chelsea, MA 02150

*Arlene Black
Admiral's Hill
Chelsea, MA 02150

*Joan Bocchino
74 Springvale Ave. Apt. # 16
Chelsea, MA 02150

*W. Bonaparte
23 Medord St.
Chelsea, MA 02150

*Louis Borgatti
331 Washington Ave.
Chelsea, MA 02150

*Frances Borgatti
331 Washington Ave.
Chelsea, MA 02150

*Grayce Borgatti
331 Washington Ave. Apt.# 2
Chelsea, MA 02150

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Mr. James Bradley, Trustee
Leeward Heights Condominium Trust
c/o Lundgren Management Group, Inc.
121 Captain's Row
Chelsea, MA 02150

*Kathleen Brennan
4 Breakwater Cove
Chelsea, MA 02150

*Mary Bronski
100 Boatswain's Way Apt. # 509
Chelsea, MA 02150

*Eleanor Brosseau
91 Franklin Ave.
Chelsea, MA 02150

*James Brosseau
60 Commandants Way
Chelsea, MA 02150

*Edmund Brosseau
97 Franklin Ave.
Chelsea, MA 02150
*Dorothy Brosseau
91 Franklin Ave.
Chelsea, MA 02150

*Joann Brosseau
91 Franklin Ave.
Chelsea, MA 02150

*Karen Brown, Trustee
100 Captain's Row Condominium Trust
c/o Lundgren Management Group, Inc.
121 Captain's Row
Chelsea, MA 02150

*Rose Buckley
145 Spencer Ave.
Chelsea, MA 02150

*Robert Burke, Jr.
165 Cottage St.
Chelsea, MA 02150

*J. Cadiz
44 Beacon St.
Chelsea, MA 02150

*Marie Caro
50 Boatswains Way Apt. # 204
Chelsea, MA 02150

*Jean Carr
6 Medford Street
Chelsea, MA 02150

*Sherry and Joe Casey
24 Boatswain's Way
Chelsea, MA 02150

*Brigitte Casey
18 Breakwater Drive
Chelsea, MA 02150

*AnnaCastillo
68 Marginal St.
Chelsea, MA 02150

*Paul Chang
50 Boatswain's Way Apt. # 111
Chelsea, MA 02150

*Raymond Charette
21 Boatswains Way
Chelsea, MA 02150

*Ms. Sheila Cherkas, Trustee
100 Commandant's Way Condominium Trust
c/o Lundgren Management Group, Inc.
121 Captain's Row
Chelsea, MA 02150

*C. Church
44 Beacon St.
Chelsea, MA 02150

*Pip Cliff
38 Medford Street
Chelsea, MA 02150

*John Clift
38 Medford St.
Chelsea, MA 02150

*Ms. Monika M. Corneille
26 Admiral's Way
Chelsea, MA 02150

*John Cronin
6 Grandview Rd.
Chelsea, MA 02150

*Richard Cuddy
100 Boatswain's Way, Apt. # 303
Chelsea, MA 02150

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Lad Dell
14 Breakwater Drive
Chelsea, MA 02150

*Salle DeMarco
200 Revere Beach Parkway
Chelsea, MA 02150

*Michael Denegris
28 Pembroke St.
Chelsea, MA 02150

*Gino DeSimone
100 Boatswains Way Apt. # 405
Chelsea, MA 02150

*Francis Dilworth
4 Ferry St.
Chelsea, MA 02150

*Mr. Louis P. DiSano
43 Breakwater Drive
Chelsea, MA 02150

*Dan Doherty
50 Boatswains Way Apt. # 305
Chelsea, MA 02150

*Francis Doherty
100 Boatswains Way
Chelsea, MA 02150

*Philip and Ann Doherty
160 Commandants Way
Chelsea, MA 02150

*Mary Donovan
100 Boatswain's Way Apt. # 507
Chelsea, MA 02150

*Maureen Downey
111 Central Ave.
Chelsea, MA 02150

*Molly Dunn
38 D. Williams St.
Chelsea, MA 02150

*Arthur Dwyer
116 Franklin Ave.
Chelsea, MA 02150

*Theresa Englans
109 Marlboro St.
Chelsea, MA 02150

*Wallie Everest
34 Breakwater Drive
Chelsea, MA 02150

*Mr. Charlie Ferguson
Soldiers' Home
91 Crest Avenue
Chelsea, MA 02150-2154

*Holly Fitzgerald
89 Winnisimmet St.
Chelsea, MA 02150

*Mr. Jack Fraser, Trustee
Clipper Condominium Trust
c/o Lundgren Management Group, Inc.
121 Captain's Row
Chelsea, MA 02150

*Joseph Frechette
122 Winnisimmet St.
Chelsea, MA 02150

*Preston Galarneau
15 Beacon St.
Chelsea, MA 02150

*Melvin Glusgul
100 Boatswains Way Apt. # 209
Chelsea, MA 02150

*Maurice Goldstein
201 Captains Row Apt. # 407
Chelsea, MA 02150

*Mark Goldstein
50 Boatswain's Way Apt. # 311
Chelsea, MA 02150

*Walter Golembiewski
95 Beacon St. Apt. # 2
Chelsea, MA 02150

*Marianne and Paul Grace
77 Boatswains Way
Chelsea, MA 02150

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Ms. Patricia Grasso
200 Captain's Row, #101
Chelsea, MA 02150

*Joan Greenlaw
150 Captains Row
Chelsea, MA 02150

*Anne Griffin
150 Captains Row
Chelsea, MA 02150

*J.M. Haggerty
69 Boatswains Way
Chelsea, MA 02150

*Don Higgins
63 Winnisimmet St.
Chelsea, MA 02150

*G. Higgins
100 Boatswains Way Apt. # 206
Chelsea, MA 02150

*Helen Hoffman
14 Bloomingdale St. Apt. # 414
Chelsea, MA 02150

*Donald Holland
61 Tudor Street
Chelsea, MA 02150

*Steven Hughes
1 Pembroke St. Apt. # 1D
Chelsea, MA 02150

*Thomas Johnson
2 Medford St.
Chelsea, MA 02150

*Christine Kenney
74 Springvale Ave. Apt. # 17
Chelsea, MA 02150

*Marianne Kershle
19 Boatswains Way
Chelsea, MA 02150

*Karyl Klopp
160 Commandants Way, Apt. # 307
Chelsea, MA 02150

*Mr. Joseph S. Kowalcczyk
37 Winnisimmet Street, Unit 3L
Chelsea, MA 02150

*Dennis Kushmerek
91 Franklin Ave.
Chelsea, MA 02150

*Dorothy Kushmerek
91 Franklin Ave., Apt. # 2
Chelsea, MA 02150

*Raelene Laplante
100 Commandants Way, Apt. # 304
Chelsea, MA 02150

*James Laprade
5 Beacon St.
Chelsea, MA 02150

*John Leggiero
5 Medford Street
Chelsea, MA 02150

*Edward Lenkiewicz
34 Pembroke St.
Chelsea, MA 02150

*Harry Lester
100 Commandants Way, Apt. # 109
Chelsea, MA 02150

*Michael Levas
100 Commandants Way
Chelsea, MA 02150

*James Lippie
50 Beacon St.
Chelsea, MA 02150

*Joseph and Angela Lo Piccolo
160 Commandants Way, Apt. # 301
Chelsea, MA 02150

*R.D. Lowry
50 Boatsains Way, Apt. # 408
Chelsea, MA 02150

*Tom Lutzy
5 Beacon St.
Chelsea, MA 02150

*Suzanne Malinowski
No Address
Chelsea, MA 02150

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Catherine Maniscalco
50 Boatswains Way Apt. # 413
Chelsea, MA 02150

*Minna Karas Marino
165 Cottage St. Apt. # 209
Chelsea, MA 02150

*Mr. John Marsh, Trustee
Admiral's Way Condominium Trust
c/o Lundgren Management Group, Inc.
121 Captain's Row
Chelsea, MA 02150

*Kerry McCormack
24 Breakwater Cove
Chelsea, MA 02150

*Joanne McDonnell
13 Medford St.
Chelsea, MA 02150

*Ms. Elaine McGrath
40 Beacon Street
Chelsea, MA 02150

*Lawrence Melcher
150 Captains Row, Apt. # 606
Chelsea, MA 02150

*Charles Milson
36 Medford St.
Chelsea, MA 02150

*Carmen Mincy
26 Breakwater Cove
Chelsea, MA 02150

*Raymond Montague
132 Adison St.
Chelsea, MA 02150

*Mr. Ron D. Morgese
65 Breakwater Drive
Chelsea, MA 02150

*Richard Murphy
20 Breakwater Cove
Chelsea, MA 02150

*M.K. Murphy
160 Commandant's Way, Apt.# 403
Chelsea, MA 02150

*Theresa Naftte
Boatswain's Way
Chelsea, MA 02150

*Phyllis Naftte
5 Boatwains Way
Chelsea, MA 02150

*Rita Nevel
160 Commandant's Way
Chelsea, MA 02150

*Alfred Nicoli
165 Cottage St., Apt. # 715
Chelsea, MA 02150

*Karen Nolan
60 Commandants Way
Chelsea, MA 02150

*Joan Northway
74 Springvale Ave.
Chelsea, MA 02150

*Katherine O'Brien
160 Commandant's Way, Apt. # 108
Chelsea, MA 02150

*Claire and John O'Brien
14 Reynolds Ave.
Chelsea, MA 02150

*Elinor O'Neill
1 Lawrence St.
Chelsea, MA 02150

*James O'Reagan
78 Garfield Ave.
Chelsea, MA 02150

*Cynthia Pacioni
50 Boatswains Way, Apt. # 301
Chelsea, MA 02150

*Kristi Paesano
25 Medford St.
Chelsea, MA 02150

*Edward Pedi
63 Winnisimmet St.
Chelsea, MA 02150

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Daniel Phiter
108 Park St.
Chelsea, MA 02150

*Brock Phillips
16 Beacon St. Apt. 3
Chelsea, MA 02150

*Robert Platner
57 Breakwater Drive
Chelsea, MA 02150

*Tracy Porrevecchio
122 Winnisimmet St., Apt. # 3
Chelsea, MA 02150

*Louis Posner
14 Admiral's Way
Chelsea, MA 02150

*Joseph Potter
3 Medford St.
Chelsea, MA 02150

*Mr. David Prusky
50 Boatswains Way, #114
Chelsea, MA 02150

*Renee J. Qualter
50 Boatswain's Way, Apt. # 212
Chelsea, MA 02150

*Ms. Mary Jane Quinn
40 Beacon Street
Chelsea, MA 02150

*Thomas Renahan
7 Admiral's Way
Chelsea, MA 02150

*Madalena Reyes
100 Commandants Way, Apt. # 102
Chelsea, MA 02150

*Gurtrone Richards
21 Jefferson Ave.
Chelsea, MA 02150

*Virginia Richards
21 Jeffferson Ave.
Chelsea, MA 02150

*Aileen Robblee
32 Willard St.
Chelsea, MA 02150

*Beth Roberto
35 Beacon St., Apt. # 2
Chelsea, MA 02150

*Daria Romano
24 Admiral's Way
Chelsea, MA 02150

*Rudy Sayms
17.5 Medford St.
Chelsea, MA 02150

*Raymond Scott
88 90 Broadway St.
Chelsea, MA 02150

*Harold Secey
27 Admiral's Way
Chelsea, MA 02150

*Carl Siembab
20 Admirals Way
Chelsea, MA 02150

*Carl Silver
50 Boatswains Way, Apt # 306
Chelsea, MA 02150

*Judith Simpson
100 Commandants Way
Chelsea, MA 02150

*Linda Smigielski
5 Eldridge Place
Chelsea, MA ,02150

*Edward Smigielski
5 Eldridge Place
Chelsea, MA 02150

*Richard Smigielski
52 Medford St.
Chelsea, MA 02150

*Patricia Sullivan
50 Boatswains Way # 506
Chelsea, MA 02150

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Edward Swingrelsko
56 Medford St.
Chelsea, MA 02150

*Denis Tackles
7 Griffin Way
Chelsea, MA 02150

*Dino Tancredi
17 Medford St.
Chelsea, MA 02150

*Patricia Taylor
74 Springvale Ave.
Chelsea, MA 02150

*Carol Traus
24 Breakwater Drive
Chelsea, MA 02150

*Mr. Richard Trauth, Trustee
Breakwater Condominium Trust
c/o Lundgren Management Group, Inc.
121 Captain's Row
Chelsea, MA 02150

*Judith Trochi
74 Captains Row Rear
Chelsea, MA 02150

*John Tryder
727 Broadway
Chelsea, MA 02150

*Richard A. Voke, Esq.
100 Everett Avenue, Unit 2
Chelsea, MA 02150

*Walter Walata
15 Marlboough St.
Chelsea, MA 02150

*Timothy Welsh
122 Winnisimmet St.
Chelsea, MA 02150

*John and Barbara Weston
15 Boatswains Way
Chelsea, MA 02150

*Jane Wilson
4 Fitz Terrace
Chelsea, MA 02150

*Jan Wolff
48 Medford St., Apt. # 3
Chelsea, MA 02150

*Richard Zonghi
21 Medford St.
Chelsea, MA 02150

*Roberta Zonghi
21 Medford St.
Chelsea, MA 02150

Cohasset

*Ms. Martha Gjestby
81 Old Pasture Road
Cohasset, MA 02025

Concord

Chet Atkins
Save Our Heritage, c/o ADS Ventures
57 Main Street
Concord, MA 01742

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Dorchester

*Mr. Michael P. County
123 Stoughton Street
Dorchester, MA 02125

*Ms. Barbara McDonough
36 Hilltop Street
Dorchester, MA 02124

*Ms. Karen L. Rucker
1111 Blue Hill Avenue, #6
Dorchester, MA 02124

East Boston

*Carolyn and Brent Banulis
33 Morris Street
East Boston, MA 02128

*Jim Banfield and Cathy Beno
372 Meridian Street, Apt. #1
East Boston, MA 02128

*Ms. Mary C Berninger
156 Saint Andrew Road
East Boston, MA 02128

*Mr. Christopher Blackler
2 Webster Avenue
East Boston, MA 02128

*Frank and Maria Bocchino
96 Faywood Avenue
Easton Boston, MA 02128

*Thomas Braind, President
East Boston Residents & Homeowners Association
83 Byron Street
East Boston, 02128

Ms. Catherine Brayden
351 Sumner Street
East Boston, MA 02128

*Karen Buttiglieri, President
Orient Heights Association
56 Beachview Road
East Boston, MA 02128

*Mr. Charles I. Cann, III
20 Leverett Avenue, #6B
East Boston, MA 02128

*Mary Catino
71 Liverpool Street
East Boston, MA 02128

*Ms. Carmela D'Amore
62 Haynes Street
East Boston, MA 02128

*Elenor Corliere
124 Bayswater St.
East Boston, MA 02128

*Edith DeAngelis
388 Meridian Street
East Boston, MA 02128

*Ernest Del Bianco
144 Bayswater St.
East Boston, MA 02128

*Mary DeStefano
146 St. Andrew Drive
East Boston, MA 02128

*Mr. Robert A. DeMayo
125 Ashley Street
Boston, MA 02128

*Ms. Mary Dreitlein
408 Summer Street
East Boston, MA 02128

*Manuel Fernandez
85 Everett Street
East Boston, MA 02128

Mr. Robert Fleming
23 Princeton Street
East Boston, MA 02128

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Natalie Harris
150 Bayswater St.
East Boston, MA 02128

*Mr. Ethan D. Hoag
177 Webster Street
East Boston, MA 02128

*Ms. Roberta T. Horn
65 St. Andrew Road
East Boston, MA 02128

*Ms. Susan M. Horn
65 St. Andrews Road
East Boston, MA 02128-1223

*George Hrono
172 Bayswater St.
East Boston, MA 02128

*Craig and Linda Jolliffe
159 Trenton Street
East Boston, MA 02128

*Mary Juliano
26 Crestway Rd.
East Boston, MA 02128

*Glynece E. Kokkalis
34 Princeton Street
East Boston, MA 02128

*Dr. and Mrs. Gilbert R. Lavoie
422 Sumner Street
East Boston, MA 02128

*Lisa LaMattina
Coordinator
Paris Street Recreation Center
112 Paris Street
East Boston, MA 02128

*Richard Lynds
Executive Director
East Boston Foundation
46 Bennington Street
East Boston, MA 02128

*Mr. William J. Manning
1 Webster Avenue
East Boston, MA 02128

*Ms. Regina M. Marchi
173 Lexington Street
East Boston, MA 02128

*Donald Marino
102 Bayswater St.
East Boston, MA 02128

*Mr. Joseph Mario
52 Waldemar Avenue
East Boston, MA 02128

*Carmela Masucci
84 Bayswater St.
East Boston, MA 02128

*Ms. Elizabeth Mazarini
173 Lexington Street
East Boston, MA 02128

*Mr. James M. McBride
10 Orleans Street, #404
East Boston, MA 02128

*Mr. Francis McHugh, Esq.
56 Princeton Street
East Boston, MA 02128

*Diane J. Modica
4 Brigham Street
East Boston, MA 02128

*Mr. Christopher J. Morton
92 Marginal Street
East Boston, MA 02128

John Nucci
99 Orient Avenue
East Boston, MA 02128

*William O'Hara
122 Bayswater St.
East Boston, MA 02128

*John Previte
88 Bayswater St.
East Boston, MA 02128

*Nancie Radicchi
155 Trenton Street
East Boston, MA 02128-2536

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Jean Reisman
188 Webster Street
East Boston, MA 02128

*Mark W. Stettler & Catheryn C. Stettler
4 Wilbur Court, #1
East Boston, MA 02128

*Ms. Charlene Stevens
12 Seaver Street, #11
East Boston, MA 02128

*Mark C. Warren, Esquire
174 Princeton Street
East Boston, MA 02209-6146

*Lori Webster
192 Gladstone Street
East Boston, MA 02128

*Ms. Ellen K. Winkler
141 Trenton Street
East Boston, MA 02128

Everett

*Sonya Cannon
38 Corey St.
Everett, MA 02149

*Ms. Olympia Mastrocola
26 Winthrop Street
Everett, MA 02149

*McCormack
18 Villa Ave.
Everett, MA 02149

Hingham

*Robert F. Belknap
12 Ringbolt Road
Hingham, MA 02043

*Charles and Susan Berry
17 Ringbolt Road
Hingham, MA 02043

*James B. Conroy
28 Croydon Road
Hingham, MA 02043

*Lynn Conroy
28 Croydon Road
Hingham, MA 02043

*Edward H. D'Alelio
7 Ringbolt Road
Hingham, MA 02043

*Albert J. Englehart
96 Martins Lane
Hingham, MA 02043

*Kathleen Fitzgerald
199 Wompatuck Road
Hingham, MA 02043

*Catherine Goldhammer
135 Martins Lane
Hingham, MA 02043

*Alice Granaham
No Address
Hingham, MA 02043

*Robert R. Green
4 Spring Lane
Hingham, MA 02043

*Doris M. Hogan
199 Wompatuck Road
Hingham, MA 02043

*Harold and Lorraine Lincoln
5 Ringbolt Road
Hingham, MA 02043

Bridget Marganelli
135 Martino Lane
Hingham, MA 02043

*James T. Norris
199 Wompatuck Road
Hingham, MA 02043

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Adrienne F. Richardson
10 Ringbolt Road
Hingham, MA 02043

*John E. Richardson
10 Ringbolt Road
Hingham, MA 02043

*Elliott Schiffman
15 Seal Cove Road
Hingham, MA 02043

*Stephen K. Thress
8 Weir Street Ext.
Hingham, MA 02043

*Bradford S. and Jane L.Tripp
9 Ringbolt Road
Hingham, MA 02043

Hull

*Nancy Brayton
16 Milford Street, #3
Hull, MA 02045

*Madeleine Carlson
39 Vautrinot Avenue
Hull, MA 02045

*Lory Newmyer and Steve Cooper
52 Highland Avenue
Hull, MA 02045

*Pauline DePari
1181 Nantasket Avenue
Hull, MA 02145

*Frank and Eileen Furey
50 Valley Beach Avenue
Hull, MA 02045

*Mark P. Ingaciola
20 Newton Street
Hull, MA 02045

*Ms. Marjorie Rilleau Kallman
15 Spinnaker Hill Lane
Hull, MA 02045

*Mr. Stephen Lathrop
14 Western Avenue
Hull, MA 02045

*Daniel and Jacqueline Llewellyn
11 James Avenue
Hull, MA 02045

*Jo Loughnane
50 Andrew Avenue
Hull, MA 02045

*Jeannette MacDonald
81 Harbor View Road
Hull, MA 02045

*Mr. James McCaffery
35 F Street
Hull, MA 02045

*Kimberly Iris Millis
8 Beacon Road
Hull, MA 02045

*William M. Reid
P.O. Box 877 – Allerton Station
Hull, MA 02045-0877

*Robert Ridolfi
15 G Street
Hull, MA 02045

*Russell
16 Milford Street, #3
Hull, MA 02045

*Anne M. Rogers
7 Christine Road
Hull, MA 02045

*Ms. Lisa J. Scannell
24 Channel Street
Hull, MA 02045

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Franklyn and Barbara Schafer
28 Standish Avenue
Hull, MA 02045

*Diana Goode
36 L Street
Hull, MA 02045

*Sean Shanahan
30 Highland Avenue
Hull, MA 02045

*Gerard J. Sperry
Sperry Group
43 Farina Road
Hull, MA 02045

*E. Vincent Sullivan
11 Crest Road
Hull, MA 02045

*Geraldine M. Townsend
2 Christine Road
Hull, MA 02045

*William E. Townsend
2 Christine Road
Hull, MA 02045

*William A. Weiser
2 Main Street
Hull, MA 02045

*Robert Carney and Wanda Willard
45 Farina Road
Hull, MA 02045

Hyannis

*Robert and Katherine Strojny
40 Murphy Road
Hyannis, MA 02601

Jamaica Plain

*Cheryl Balukonis
43 Boynton Street, #3L
Jamaica Plain, MA 02130

*Daniel L. Barnett
16 Alveston Street
Jamaica Plain, MA 02130

*Sarah Buchmann
50 Weld Hill Street
Jamaica Plain, MA 02130

*Constance R. Cecil
8 Glenside Avenue
Jamaica Plain, MA 02130

*Peter Clarke
7 Alveston Street
Jamaica Plain, MA 02130

*Nancy Doherty
116 Sedgwick Street
Jamaica Plain, MA 02130

*Jack Dolan
26 Greenough Avenue
Jamaica Plain, MA 02130

*Marty Epp and Judy K. Mencher
12 Revere Street
Jamaica Plain, MA 02130

*Donald H. Eunson, Jr.
34 Jamaica Street
Jamaica Plain, MA 02130

*Magdalena Fernandez
21 John Andrew Street
Jamaica Plain, MA 02130

*Gerard M. Finch
16 Alveston Street
Jamaica Plain, MA 02130

*Jacqueline Gambarini
8 Everett Street
Jamaica Plain, MA 02130

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Thomas Harrigan
16 Roanoke Avenue
Jamaica Plain, MA 02130

*Arthur L. Johnson
48 Robeson Street
Jamaica Plain, MA 02130

*Barbara Kaplan
48 Robeson Street
Jamaica Plain, MA 02130

*Lisa Lederer
2 Wayburn Road
Jamaica Plain, MA 02130

*Mike Lew
16 Roanoke Avenue
Jamaica Plain, MA 02130

*Sal Lopes
24 Greenough
Jamaica Plain, MA 02130

*Ms. Myra N. Love
19 Roseway Street
Jamaica Plain, MA 02130

*Will Lyman
18 Greenough Avenue
Jamaica Plain, MA 02130

*Martha Merson
19 Roseway Street
Jamaica Plain, MA 02130

*Joseph M. Nucci
238 Wachusett Street
Jamaica Plain, MA 02130

*Laura Orlando
31 Moraine Street
Jamaica Plain, MA 02130

*Emily Peckham
16 Glade Avenue
Jamaica Plain, MA 02130

*Anne Rogers
46 Lila Road
Jamaica Plain, MA 02130

*James P. Sliker
15 Roanoke Avenue
Jamaica Plain, MA 02130

*Lynn Thornton
15 Roanoke Avenue
Jamaica Plain, MA 02130

*Danielle Toth
24 Greenough Avenue
Jamaica Plain, MA 02130

*David Weinstein
24 Cranston Street
Jamaica Plain, MA 02130

*Jacques Weissgerber
30 Newbern Street, #3
Jamaica Plain, MA 02130

Malden

*Virginia Fontana
51 West St.
Malden, MA 02148

Medford

*Richard Jordon
360 Grove Street
Medford, MA 02155-1431

*Jill Richard
291 High Street
Medford, MA 02155

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Milton

*Dorothy Murphy
24 Brae Burn Rd.
Milton, MA 02186

Newton

*T. Brown
193 Oak Street, #103
Newton, MA 02464

Peabody

*Paula Walach
10 Haskell Place
Peabody, MA 01960

Quincy/North Quincy

*Dan Condon
1495 Hancock Street
Quincy, MA 02151

*Maryann P. Mahony
18 Hummock Road
North Quincy, MA 02171

*Marie and James Stamos
22 Sonoma Road
Quincy, MA 02171

Revere

*Ivan and Nancy Blecher
1025 Winthrop Avenue
Revere, MA 02151

*Carol Cappola
13 Taft St., Apt. # 2
Revere, MA 02151

*Michael Callahan
265 Crescent Avenue
Revere, MA 02151

*Lil Douglas
5 Jefferson Drive
Revere, MA 02151

*Mary and Mike Furlong
45 Lancester Ave.
Revere, MA 02151-1732

*Lynn Mazzaullo
149 Endicott Avenue
Revere, MA 02151

*Ronald Senna
25 Fennio St.
Revere, MA 02151

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Roslindale

*Matthew S. Baronas
80 Sherwood Street
Roslindale, MA 02131

*Natalie Diffloth
28 Symmes Street
Roslindale, MA 02131

*Sal Lopes
30 Symmes Street
Roslindale, MA 02131

*Stephanie Moura and Kate Keeler
37 Prospect Avenue
Roslindale, MA 02131

*Mary A. Moynihan
52 Augustus Avenue
Roslindale, MA 02131

*Sheryl M. White
29 Mendum Street
Roslindale, MA 02131

*Alan Wright
57 Arborough Road
Roslindale, MA 02131

Roxbury

John Mahoney
Nuestra, CDC
56 Warren Street
Roxbury, MA 02119

*Todd L. Payton
107 Howland Street
Roxbury, MA 02121

Somerville

*Ellen G. Band
1 Fitchburg Street, #B152
Somerville, MA 02143

*Dick Bauer
58 Berkeley Street
Somerville, MA 02143

*Ramon Bueno and Debra Weisberg
1 Fitchburg Street, #B550
Somerville, MA 02143

*Jack Christin, Jr.
130 Ten Hills Road
Somerville, MA 02145

*Derek C. Dyer
59 Hall Avenue
Somerville, MA 02144

*Anthony W. Espy
1 Fitchburg Street, #C201
Somerville, MA 02143

*Tilghman Evans
1 Fitchburg Street
Somerville, MA 02143

*William Falcetano
45 Cherry Street
Somerville, MA 02144

*Irving Fischman, Ph.D.
106 Summer Street
Somerville, MA 02143

*Al Fisher
1 Fitchburg Street, #C318
Somerville, MA 02143

*Tad Flynn
1 Fitchburg Street, #C304
Somerville, MA 02143

*Angela Healy
52 Bradley Street
Winter Hill, MA 02145

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Suzan Kelly
23 Boston Avenue
Somerville, MA 02144

*Carol Kiley
31 Barton Street
Somerville, MA 02145

*Mo Lotman
48 Gorham Street
Somerville, MA 02144

*Alice Atwood Mahoney
Atwood Studio Realty Trust
1 Fitchburg Street, C118B
Somerville, MA 02143-2126

*Panamai Manadee
1 Fitchburg Street
Somerville, MA 02143

*Beth Manaster
One Fitchburg Street, #B-250
Somerville, MA 02143

*Michael Mercandante
1 Fitchburg Street, #C518
Somerville, MA 02143

*Elizabeth and Brian Merrick
967 Broadway
Somerville, MA 02144

*Grazia Marzot
1 Fitchburg Street, C-109
Somerville, MA 02143

*Cecil Nickerson
90 Glenwood Road
Somerville, MA 02145

*Lawrence Paolella
42 Oxford Street
Somerville, MA 02143-1608

*Margaret Sanfilippo
61 Preston Road
Somerville, MA 02143

*Jane Sauer
25 Hancock Street
Somerville, MA 02144

*Amanda Sawires
55 Columbus Avenue, #2
Somerville, MA 02143

*Marguerite Scott
204 Powderhouse Blvd.
Somerville, MA 02144

*Jerry Shine
204 Powderhouse Blvd.
Somerville, MA 02144

*Deirdre Smith
One Fitchburg Street, #B-250
Somerville, MA 02143

*Allison Steiber
14 Wyatt Street
Somerville, MA 02143

*Susan Strauss and Jane Owen
20 Willoughby Street
Somerville, MA 02143

*Daniel Toner
17 Boston Avenue
Somerville, MA 02143

*Carla Wilbur
C407 One Fitzburgh Street
Somerville, MA 02143

*Lawrence A. Yager
3 Springhill Terrace
Somerville, MA 02143

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

South Boston

*Daniel Horgan
Editor, South Boston Tribune
395 West Broadway
South Boston, MA 02127

*Sheila Lynch
461 East Eighth street
South Boston, MA 02127

*John Mullen
Andrew Square Civic Association
126 Tudor Street, Apt. C
South Boston, MA 02127

*Ms. Alice O'Leary
Publisher, South Boston Tribune
395 West Broadway
South Boston, MA 02127

West Roxbury

*Larry Boran
40 Vershire Street
West Roxbury, MA 02132

*Keith Davison
37 Hastings Street, #206-ME
West Roxbury, MA 02132

*Joanne McGrath
206 Stratford Street
West Roxbury, MA 02130

*Andrea Taaffe
178 Perham Street
West Roxbury, MA 02132

Weymouth/East Weymouth

*Ronald A. Fama
11 St. Anne Road
East Weymouth, MA 02189

Whitman

*John Yaney
81 West Street
Whitman, MA 02382

Winthrop

*Michael Abrams
24 Tileston Rd.
Winthrop, MA 02152

*Diane Adelsten
70 Edgehill Rd.
Winthrop, MA 02152

*Marie Alioto
47 Pleo Ave.
Winthrop, MA 02152

*Vincenzo Amara
789 Shirley St.
Winthrop, MA 02152

*Joann Amatucci
155 Sunnyside Ave.
Winthrop, MA 02152

*David Ambrose
263 Bowdoin St.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*David and Mary Ambrose
263 Bowdoin St.
Winthrop, MA 02152

*Judith Anderson
94 Bellevue Ave., Apt.# 1
Winthrop, MA 02152

*Ken Avery
140 Woodside Ave.
Winthrop, MA 02152

*Leo Bachini
247 Winthrop St.
Winthrop, MA 02152

*Tullio Baldi
150 Washington Ave.
Winthrop, MA 02152

*Geo Barisano
436 Pleasant St.
Winthrop, MA 02152

*Marlene Barnes
62 Lowell Rd.
Winthrop, MA 02152

*Marjorie Beaudry
87 Hermon St.
Winthrop, MA 02152

*Donn Belair
10 Nevada St., Apt. # 3
Winthrop, MA 02152

*Julich Belfante
102 Grand View Ave.
Winthrop, MA 02152

*Ann Belmonte
4 Elmwood Court
Winthrop, MA 02152

*Christine Berg
42 Brookfield Rd.
Winthrop, MA 02152

*Ronald and Antoinette Bergman
26 Elmwood Ave.
Winthrop, MA 02152

*Annette Bertino
179 Winthrop St.
Winthrop, MA 02152

*Carl Bettano
7 Woodside Park
Winthrop, MA 02152

*Ms. Barbara J. Bishop
200 Washington Avenue
Winthrop, MA 02152

*Blake Family
2 Sargent Terrace
Winthrop, MA 02152

*Patricia Bliton
46 Harbor View Ave.
Winthrop, MA 02152

*Normand Bolduc
45 Nevada St.
Winthrop, MA 02152

*Kevin and Sharonlee Bolger
117 Shirley St.
Winthrop, MA 02152

*Trish Bosco
5 Woodside Park
Winthrop, MA 02152

*J.G. Boujoukos
74 Locust St.
Winthrop, MA 02152

*Stephanie and William Boulaf
37 Bay View Ave.
Winthrop, MA 02152

*Frank and Marie Brickley
24 Sewall Ave.
Winthrop, MA 02152

*James Brogan
49 Bates Ave.
Winthrop, MA 02152

*William Brown
25 Moore St.
Winthrop, MA 02152

*Alan Brown
57 Central St.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*S. Bruno
64 Undine Ave.
Winthrop, MA 02152

*Marie Bucca
85 Read St.
Winthrop, MA 02152

*Dan Buckley
39 Coral Ave.
Winthrop, MA 02152

*Linda Bunes
7 Elliot St.
Winthrop, MA 02152

*John Burk
11 Eleanor Ct.
Winthrop, MA 02152

*Edward Burns
36 Marshall St.
Winthrop, MA 02152

*Steven Butters
278 Winthrop St.
Winthrop, MA 02152

*Madeleine Butters
278 Winthrop St.
Winthrop, MA 02152

*Beth and James Caeran
15 Marshall St.
Winthrop, MA 02152

*John Cajolet
12 Beacon St.
Winthrop, MA 02152

*Diane Caravan
3 Woodside Park
Winthrop, MA 02152

*Dale Carey
30 Lewis Ave.
Winthrop, MA 02152

*Patricia Carey
53 Bellvue Ave., Apt. # 1
Winthrop, MA 02152

*Mary Carney
817 Shirley St.
Winthrop, MA 02152

*Ralph Carrieri
25 Taylor St.
Winthrop, MA 02152

*Carl Carver
17 Lewis Terrace
Winthrop, MA 02152

*Eleanor Casey
308 Bowdoin Street
Winthrop, MA 02152

*Jeanne Cash
56 Townsend St.
Winthrop, MA 02152

*Colin Cash
56 Townsend St.
Winthrop, MA 02152

*Steve Celona
819 Shirley St.
Winthrop, MA 02152

*Fred and Genia Cerulli
29 Triton Ave.
Winthrop, MA 02152

*D Champa
39 Coral Ave.
Winthrop, MA 02152

*Karen Chavis
63 Lincoln St.
Winthrop, MA 02152

*Michael Chavis
141 Circuit Rd.
Winthrop MA 02152

*Sandra Checkoway
80 Read St.
Winthrop, MA 02152

*Diane Cheffi
31 Willow Ave.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Paul Chicarello
47 Sunnyside Ave.
Winthrop, MA 02152

*Anna Ciarcia
320 Bowdoin St.
Winthrop, MA 02152

*John and Barbara Cimino
54 Townsend St.
Winthrop, MA 02152

*John Cioppa
440 Pleasant St.
Winthrop, MA 02152

*Doreen Clark
29 Neptune Ave.
Winthrop, MA 02152

*Timberly Clarke
89 Undine Ave.
Winthrop, MA 02152

*Judy and Paul Claus
40 Girdlestone Rd.
Winthrop, MA 02152

*Anne Marie Clougherty
53 Lewis Ave.
Winthrop, MA 02152

*John Clucas
87 Undine Ave.
Winthrop, MA 02152

*Ella Cochrane
807 Shirley St.
Winthrop, MA 02152

*Joseph Cohen
200 Woodside Ave.
Winthrop, MA 02152

*James Collins
15 Triton Ave.
Winthrop, MA 02152

*Vincent Collins
242 Grand View Ave.
Winthrop, MA 02152

*Jacqueline Collins
242 Grand View Ave.
Winthrop, MA 02152

*Patricia Concessi
15 Lakeshore Drive
Winthrop, MA 02152

*Thomas Connelly
43 Bellvue Ave.
Winthrop, MA 02152

*Paul Corbet
271 Winthrop St.
Winthrop, MA 02152

*Phyllis Corbin
66 Chester Ave.
Winthrop, MA 02152

*Elinor Corbin
49 Townsend St.
Winthrop, MA 02152

*Kevin Corkhum
142 Cliff Ave.
Winthrop, MA 02152

*Wendy Corkhum
142 Cliff Ave.
Winthrop, MA 02152

*Paul Corkhum
301 Winthrop St.
Winthrop, MA 02152

*Patricia Corkhum
301 Winthrop St.
Winthrop, MA 02152

*Donna Corso
175 Strand St.
Winthrop, MA 02152

*Pat Costello
529 Pleasant St.
Winthrop, MA 02152

*Bernard Costigan
50 Belcher St.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Daniel Coughlin
23 Cottage Park Rd.
Winthrop, MA 02152

*Nancy J. Crombe
51 Palmyra Street
Winthrop, MA 02152

*Frances Cross
15 Fremont St.
Winthrop, MA 02152

*Linda Crowell
82 Plummer Ave.
Winthrop, MA 02152

*Lucille Crowley
19 George St.
Winthrop, MA 02152

*James and Ellen Cullinane
77 Tafts Ave.
Winthrop, MA 02152

*Frances Cuminale
113 Tafts Ave.
Winthrop, MA 02152

*Brenda and Thomas Curry
291 River Rd.
Winthrop, MA 02152

*Elaine Dacey
11 Loring Rd.
Winthrop, MA 02152

*Anne Dalrymple
116 Bowdoin St.
Winthrop, MA 02152

*Lorraine Daly
37 Pebble Ave.
Winthrop, MA 02152

*Ronald D'Amore
480 Pleasant St.
Winthrop, MA 02152

*William Deeb
127 Buchanan St.
Winthrop, MA 02152

*Andrew and Marily DeFilippis
14 George St.
Winthrop, MA 02152

*Anthony and Pia Della Piana
78 Beal St.
Winthrop, MA 02152

*Louis and Lillian Dell'Aria
8 Edgehill Rd.
Winthrop, MA 02152

*Kathy DeMare
64 Putnam St.
Winthrop, MA 02152

*Douglas DeMio
25 Girdlestone Rd.
Winthrop, MA 02152

*Gerald Demio
83 Washington Ave.
Winthrop, MA 02152

*Carol Demio
83 Washington Ave.
Winthrop, MA 02152

*Silvio Demodena
132 Winthrop St.
Winthrop, MA 02152

*Susan Dempsey
1088 Shirley St.
Winthrop, MA 02152

*Jana Dengler
163 Strandway
Winthrop, MA 02152

*Mr. Gregory DePatto
26 Buchanan Street
Winthrop, MA 02152-2609

*V. DiGirolamo
11 Bellevue Ave., Apt # 2
Winthrop, MA 02152

*Richard DiMento
118 Woodside Ave.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Carmen Domenico
26 Buchanan St.
Winthrop, MA 02152

*John and Barbara Domenico
62 Faun Bar Avenue
Winthrop, MA 02152

*Theresa Domenico
26 Buchanan St.
Winthrop, MA 02152

*Elizabeth Donovan
789 Shirley St., Apt. # 1
Winthrop, MA 02152

*Gerald Dorr
177 Woodside Ave.
Winthrop, MA 02152

*Mary Doucette
845 Shirley St.
Winthrop, MA 02152

*Joseph Dow
31 Beal St.
Winthrop, MA 02152

*Clara Driscoll
170 Grovers Ave.
Winthrop, MA 02152

*Kathleen Driscoll
23 Ocean Ave.nue
Winthrop, MA 02152

*Robert Driscoll, Sr.
170 Grovers Avenue
Winthrop, MA 02152

*Loretta English
11 WaldenSt., Apt. # 4-8
Winthrop, MA 02152

*Donna Eruzione
28 Thornton St.
Winthrop, MA 02152

*Robert Eshback
200 Washington Ave.
Winthrop, MA 02152

*Richard Evans
23 Girdlestone Rd.
Winthrop, MA 02152

*James Ezekiel
93 Undine Ave.
Winthrop, MA 02152

*Ann Falbo
75 Highland Ave.
Winthrop, MA 02152

*Rose Falzarano
15 Willow Ave.
Winthrop, MA 02152

*Billie Farmer
50 Paine St.
Winthrop, MA 02152

*Emily Favaloro
215 Woodside Ave.
Winthrop, MA 02152

*Kay Femino
40 Chester Ave.
Winthrop, MA 02152

*Richard Ferrino
10 North Avenue
Winthrop, MA 02152

*Gino and Grace Ferri
78 Beal St.
Winthrop, MA 02152

*Giacomo Ficaro
30 Emerson Rd.
Winthrop, MA 02152

*Maureen Fidler
516 Pleasant St.
Winthrop, MA 02152

*Denise Finamore
1062 Shirley St.
Winthrop, MA 02152

*Renee Finn
80 Bartlett Rd.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Vincent Finocchio
74 Atlantic St.
Winthrop, MA 02152

*Jane Fitzgerald
900 Shirley St.
Winthrop, MA 02152

*Karen Flaherty
8 Somerset Terrace
Winthrop, MA 02152

*Robert Flaherty
81 Winthrop Shore
Winthrop, MA 02152

*B.T. Flockhart
3 Seal Harbor Rd., Apt. # 837
Winthrop, MA 02152

*William Floyd
14 Pebble Ave.
Winthrop, MA 02152

*Cindy Floyd
24 Elliot St.
Winthrop, MA 02152

*Nancy and Arthur Floyd
42 Main St.
Winthrop, MA 02152

*Doreen Flyell
105 Howell Rd.
Winthrop, MA 02152

*Teresa Foley
208 River Road
Winthrop, MA 02152

*Jean Forbes
41 Washington Ave., Apt. # 1
Winthrop, MA 02152

*Donald Ford
172 Highland Ave.
Winthrop, MA 02152

*William and Ruth Ford
46 Triton Ave.
Winthrop, MA 02152

*Anthony Ford
70 Triton Ave.
Winthrop, MA 02152

*Sandi Forman
480 Pleasant St.
Winthrop, MA 02152

*Mildred Fox
829 Shirley St.
Winthrop, MA 02152

*Charles Fox
829 Shirley St.
Winthrop, MA 02152

*James and Pauline Frati
57 Cottage Park Road
Winthrop, MA 02152

*William Frazier
54 Lewis St.
Winthrop, MA 02152

*Paul Frederico
59 Pebble Ave.
Winthrop, MA 02152

*Natalie Furlong
102 Bay View Ave.
Winthrop, MA 02152

*Robert Gagin
2 Somerset Ave.
Winthrop, MA 02152

*Michael Gahan
105 Sunnyside Ave.
Winthrop, MA 02152

*Laurie Gallese
50 Triton Ave.
Winthrop, MA 02152

*Susan Gaughan
154 River Rd.
Winthrop, MA 02152

*Carol Gay
20 Otis St.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Janet Gelles
3 Seal Harbor Rd., Apt. # 547
Winthrop, MA 02152

*Susan and Jeff Gerow
47 Crystal Cove Ave.nue
Winthrop, MA 02152

*Clifford Gilbert
41 Summit Ave.
Winthrop, MA 02152

*Florence Gilfoyle
60 Johnson Ave.
Winthrop, MA 02152

*Pam Gilfoyle-Lund
60 Johnson Ave.
Winthrop, MA 02152

*Kerri-Anne Gill
91 Grovers Ave.
Winthrop, MA 02152

*Katherine Gill
291 Winthrop St.
Winthrop, MA 02152

*Mr. Richard D. Gill
291 Winthrop Street
Winthrop, MA 02152

*Susan Gillis
777 Shirley St.
Winthrop, MA 02152

*Geraldine Gillis
70 Pebble Ave.
Winthrop, MA 02152

*Henry Glock
2 Elliot St.
Winthrop, MA 02152

*Patricia Godfrey
88 Undine Ave.
Winthrop, MA 02152

*Arthur Goodearl
270 Bowdoin St.
Winthrop, MA 02152

*Nancy Goodearl
78 Chester Ave.
Winthrop, MA 02152

*Arthur Gray
233 Woodside Ave.
Winthrop, MA 02152

*Peter Graziano
85 Woodside Ave.
Winthrop, MA 02152

*Patricia Gregory
466 Pleasant St.
Winthrop, MA 02152

*Carmela Guarino
112 Washington Ave.
Winthrop, MA 02152

*Rosemary Guerra
318 Bowdoin St.
Winthrop, MA 02152

*Matt Gunn
29 Billows St.
Winthrop, MA 02152

*Herbert Guttell
7 Elmwood Ct.
Winthrop, MA 02152

*Carl Halvorseu
54 Otis St.
Winthrop, MA 02152

*Nancy Hanlon
62 Ingleside Ave.
Winthrop, MA 02152

*Lynne Hanson
235 Bowdoin St.
Winthrop, MA 02152

*Laura Haratian
76 Chester Ave.
Winthrop, MA 02152

*Robert Harney
55 Washington Ave.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Marion Harson
150 Grandview Ave.
Winthrop, MA 02152

*Patricia Hartnett
989 Shirley St.
Winthrop, MA 02152

*Rita Hartnett
91 Veterans Rd.,Apt. # 416
Winthrop, MA 02152

*Roger Hathaway
119 River Rd.
Winthrop, MA 02152]

*Daniel Hegarty
56 Triton Ave.
Winthrop, MA 02152

*Luther Heller
39 Bayview Ave.
Winthrop, MA 02152

*Kay Herbert
65 Sunnyside Ave.
Winthrop, MA 02152

*Ms. L. Gertrude Honan
132 Hermon Street
Winthrop, MA 02152-3027

*Richard Honan
92 Johnson Ave.
Winthrop, MA 02152

*Mark Honan
260 Pleasant St.
Winthrop, MA 02152

*Thomas Honan
26 Pico Ave.
Winthrop, MA 02152

*Christine Honan
92 Johnson Ave.
Winthrop, MA 02152

*R. Honan
92 Johnson Ave.
Winthrop, MA 02152

*Amy Honan
52 Waldemar, Apt.# 2
Winthrop, MA 02152

*Jane Howell
88 Marshall St.
Winthrop, MA 02152

*Norman Hubley
62 Lowell Rd.
Winthrop, MA 02152

*Norman Hubley
62 Lowell Rd.
Winthrop, MA 02152

*Stephen Hudd
68 Bates Ave.
Winthrop, MA 02152

*Larry Huntoon
24 Wadsworth Ave.
Winthrop, MA 02152

*Donna Hurley
15 Elliot St.
Winthrop, MA 02152

*Arthur Hurwitz
149 River Rd.
Winthrop, MA 02152

*Jean Hussey
84 Grand View Ave.
Winthrop, MA 02152

*Frederick Jarvis
91 Undine Ave.
Winthrop, MA 02152

*Charles and Leslie Jesson
21 Beal St.
Winthrop, MA 02152

*Elizabeth Jewett
15 Beal St.
Winthrop, MA 02152

*Richard Johnson
16 James Ave.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Mary T. Jurovich
1 Pond St., Apt. # 5C
Winthrop, MA 02152

*Daniel Kearns
21 Wadsworth Ave.
Winthrop, MA 02152

*Robert Keitil
P.O. Box 520177
Winthrop, MA 02152

*William Kelleher
61 Sunnyside Ave.
Winthrop, MA 02152

*John Kelleher
5 Pratt St.
Winthrop, MA 02152

*Jane Kelleher
5 Pratt St.
Winthrop, MA 02152

*Elizabeth Kelleher
32 Tafts Ave., Apt # 2
Winthrop, MA 02152

*David Kennedy
14 Egleton Park
Winthrop, MA 02152

*Mary and David Kennedy
46 Brookfield Rd.
Winthrop, MA 02152

*Arthur Kennedy
51 Otis St.
Winthrop, MA 02152

*Ellen Kiernan
779 Shirley St.
Winthrop, MA 02152

*John Kilmartin
305 Winthrop St.
Winthrop, MA 02152

*Gail Klimas
24 Belcher St.
Winthrop, MA 02152

*Mary Doyle and Agnes Knox
26 Billows St.
Winthrop, MA 02152

*Philip Lambert
180 Winthrop St.
Winthrop, MA 02152

*Lapoint
39 Edgehill Rd.
Winthrop, MA 02152

*Terrance Lawlor
35 Sagamore Ave.
Winthrop, MA 02152

*Thomas Lawlor
35 Sagamore Ave.
Winthrop, MA 02152

*Delores Lazzarino
84 Linclon St.
Winthrop, MA 02152

*James LeBlanc
226 Woodside Ave.
Winthrop, MA 02152

*Grace LeBlanc
37 Bellvue Ave.
Winthrop, MA 02152

*Susan Lee
31 Lincoln St.
Winthrop, MA 02152

*Marcy Lender
226 Woodside Ave.
Winthrop, MA 02152

*Ernest Lessard
350 Winthrop St.
Winthrop, MA 02152

*Dawn Letterie
114 Brookfield Rd.
Winthrop, MA 02152

*Donald Lindquist
75 Beal St.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Christine Loring
17 Bartlett Parkway
Winthrop, MA 02152

*Mr. Edward F. Lowney
841 Shirley Street
Winthrop, MA 02152

*Salvatore Lupis
75 Hermon St.
Winthrop, MA 02152

*Kenneth MacAdams
175 Strand St.
Winthrop, MA 02152

*William Macphail
94 Terrace Ave., Apt # 1
Winthrop, MA 02152

*Winona Madison
82 Sunnyside Ave.
Winthrop, MA 02152

*Denise Mahoney
23 Edgehill Rd.
Winthrop, MA 02152

*Dorothy Mahoney
827 Shirley St.
Winthrop, MA 02152

*Louise Marchionda
26 Oceanview Way
Winthrop, MA 02152

*Gloria Marcinckowski
33 Townsend St.
Winthrop, MA 02152

*John Marcy
308 Bowdoin St.
Winthrop, MA 02152

*Marion Marguiro
244 Grandview Ave.
Winthrop, MA 02152

*Patrick and Marilyn Marino
35 Girdlestone Rd.
Winthrop, MA 02152

*Robert Marino
36 Tileston Rd.
Winthrop, MA 02152

*James Marr
Treasurer
Winthrop Chamber of Commerce
72 Crystal Cove Avenue
Winthrop, MA 02152

*Anita L. Martin
139 Washington Avenue
Winthrop, MA 02152

*Ferdinand Martino
43 Lewis Ave.
Winthrop, MA 02152

*Mary Martucci
94 Sunnyside Ave.
Winthrop, MA 02152

*Charles Mason
118 Terrace Ave.
Winthrop, MA 02152

*Robert Mass
74 Grandview Ave.
Winthrop, MA 02152

*Joseph McCall
47 Otis St.
Winthrop, MA 02152

*K. McCauley
36 Perkins St.
Winthrop, MA 02152

*L.S. McCormick
98 Oceanview St.
Winthrop, MA 02152

*Scott and Bethann McCoy
35 Thornton Park
Winthrop, MA 02152

*Paul McGee
39 Seafoam
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Arthur McGee
29 Hale Ave.
Winthrop, MA 02152

*Ann McGrath
26 Sagamore Ave.
Winthrop, MA 02152

*Catherine McGrath
25 Read St.
Winthrop, MA 02152

*Louise McIlroy
43 Tafts Ave., Apt. # A
Winthrop, MA 02152

*Diane McKinnon
15 Ocean View Way
Winthrop, MA 02152

*Marjorie McLaughlin
149 Bowdoin St.
Winthrop, MA 02152

*Michael McManus
66 Waldemar Ave.
Winthrop, MA 02152

*Kathleen McNeff
58 Brookfield Rd.
Winthrop, MA 02152

*Barbara McNeil
Executive Director
Winthrop Chamber of Commerce
207 Hagman Road
Winthrop, MA 02152

*Mr. Thomas A. McNiff, Jr.
118 Grandview Avenue
Winthrop, MA 02152

*Mary Jane Meaney
65 Beal St.
Winthrop, MA 02152

*Mary Medearis
3 Seal Harbor Rd.
Winthrop, MA 02152

*Louis Meinhardt
45 Grovus Ave.
Winthrop, MA 02152

*Joseph Mercier
85 Beal St.
Winthrop, MA 02152

*Michele Messino
257 Bowdoin St.
Winthrop, MA 02152

*D. Miles
46 Enfield Rd.
Winthrop, MA 02152

*Robert Millerich
One Pond St., Apt 2D
Winthrop, MA 02152

*Paul Millerick
82 Beal St.
Winthrop, MA 02152

*Edward Minichello
160 Woodside Ave.
Winthrop, MA 02152

*Mary Mitchell
121 Bartlett Rd.
Winthrop, MA 02152

*Tom Montgomery
22 Willow Ave.
Winthrop, MA 02152

*C.P. Moore
34 Siren St.
Winthrop, MA 02152

*Dorine Moore
60 Shirley St.
Winthrop, MA 02152

*Ruth Morrison
19 Bellvue Ave.
Winthrop, MA 02152

*R.E. Moses
1039 Shirley St.
Winthrop, MA 02152

*Robert Moynihan
760 Shirley St.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Catherine Mulleague
170 Court Rd.
Winthrop, MA 02152

*Joseph Mulleague
170 Court Rd.
Winthrop, MA 02152

*Joyce Murphy
14 Waldemar Ave.
Winthrop, MA 02152

*Margaret Murphy
14 Waldemar Ave.
Winthrop, MA 02152

*Ms. Helen Murray
59 Beach Road
Winthrop, MA 02152

*G.J. Nargi
45 Somerset Ave.
Winthrop, MA 02152

*John Nargi
45 Somerset Ave.
Winthrop, MA 02152

*Fred Naumann
503 Pleasant St.
Winthrop, MA 02152

*Andrew Nazzaro
62 Pebble Ave.
Winthrop, MA 02152

*John Nimblett
83 Ingleside Ave.
Winthrop, MA 02152

*Santo Noe
65 Bay Biew Ave.
Winthrop, MA 02152

*Ann Norris
63 Walden St.
Winthrop, MA 02152

*Janice Nugent
5 Walden St.
Winthrop, MA 02152

*Joseph O'Brien
25 Wadsworth Ave.
Winthrop, MA 02152

*Janet O'Connell
9 Ocean View St.
Winthrop, MA 02152

*Bernadette O'Grady
30 Bellevue Ave.
Winthrop, MA 02152

*Isabel Ohara
219 Court Rd.
Winthrop, MA 02152

*Margaret O'Leary
4 Atkinson Circle
Winthrop, MA 02152

*Ms. Eleanora Olivolo
41 Beal Street
Winthrop, MA 02152

*Audrey O'Malley
48 Grand View Ave.
Winthrop, MA 02152

*Deborah Osborne
474 Pleasant St.
Winthrop, MA 02152

*Rosemarie Ottaviano
84 Bellvue Ave.
Winthrop, MA 02152

*Mario Paolini
527 Pleasant St.
Winthrop, MA 02152

*Mary Paterson
70 Cottage Ave.
Winthrop, MA 02152

*Judith Pearce
248 Shirley St.
Winthrop, MA 02152

*Priscilla Perini
3 Seal Harbor Rd.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Roger Petruccelli
275 River Road
Winthrop, MA 02152

*Michael Picardi
51 Palmyra St.
Winthrop, MA 02152

*Maureen Picciuolo
36 Bates Ave.
Winthrop, MA 02152

*Elaine Pierzanowski
231 Grovers Ave., Apt. # A
Winthrop, MA 02152

*Connie Pike
3 Elliot St.
Winthrop, MA 02152

*Renee Pike
25 Washington Ave.
Winthrop, MA 02152

*Joseph Pilse
25 Washington Ave.
Winthrop, MA 02152

*Miriam Pizer
88 Somerset Ave.
Winthrop, MA 02152

*Frances Pollina
109 Shore Drive
Winthrop, MA 02152

*Maureen Powers
289 Pleasant St.
Winthrop, MA 02152

*Victor and Diane Presto
232 Woodside Ave.
Winthrop, MA 02152

*Robert Prew
73 Plummer Ave.
Winthrop, MA 02152

*George Pulsifer
93 Bay View Ave.
Winthrop, MA 02152

*Robert Pulsifer
1050 Shirley Street
Winthrop, MA 02152

*James Putman
62 Almar St.
Winthrop, MA 02152

*Stephanie and Robert Pyne
27 Amelia Ave.
Winthrop, MA 02152

*Queenan
145 Main St.
Winthrop, MA 02152

*Helen Quirck
962 Shirley St.
Winthrop, MA 02152

*Rita Quirk
112 Brookfield Rd.
Winthrop, MA 02152

*Pamela Racicot
241Court Rd.
Winthrop, MA 02152

*Charlotte Rackowski
79 Highland Ave.
Winthrop, MA 02152

*Phillip Rago
74 Beal St.
Winthrop, MA 02152

*Edith Raymond
27 Tafts Ave.
Winthrop, MA 02152

*M.B. Reardon
41 Upland Rd.
Winthrop, MA 02152

*John Reese
67 Sunnyside Ave.
Winthrop, MA 02152

*Donald Regan
15 Francis St.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Peggy and Gary Reidster
164 Grovers Ave.
Winthrop, MA 02152

*Mary Reilly MacNeil
115 Loring Rd.
Winthrop, MA 02152

*Harold Reinstein
3 Seal Harbor Rd., Apt. # 432
Winthrop, MA 02152

*Kristen Reynolds
36 Girdlestone Rd.
Winthrop, MA 02152

*Pauline Rielly
41 Bowoin St., Apt.# 27
Winthrop, MA 02152

*Sheryl Rimer
45 Nahant Ave.
Winthrop, MA 02152

*Anne Ripley
179 Winthrop St.
Winthrop, MA 02152

*Kathleen Rock
30 Beal St.
Winthrop, MA 02152

*Nancy Rodes
47 Edgehill Rd.
Winthrop, MA 02152

*Richard Rodes
47 Edgehill Rd.
Winthrop, MA 02152

*Mary Rodes
60 Oceanview St.
Winthrop, MA 02152

*Romeo Rodrigues
118 Sunnyside Ave.
Winthrop, MA 02152

*Elvin Rodriguez
52 Waldemar Ave., Apt # 2
Winthrop, MA 02152

*John Rogers
7 Siren St.
Winthrop, MA 02152

*Nathaniel Rorick
65 Undine Ave.
Winthrop, MA 02152

*Gertrude Rosa
86 Ingleside Ave.
Winthrop, MA 02152

*James Ross
21 George St.
Winthrop, MA 02152

*Joanne Sacco
31 Wadsworth Ave.
Winthrop, MA 02152

*Russ Sanford
Vice President
Winthrop Chamber of Commerce
207 Hagman Road
Winthrop, MA 02152

*Anthony Santilli
14 Brookfield Rd.
Winthrop, MA 02152

*Joseph Saraceno
Box 95
Winthrop, MA 02152

*Nancy Savoia
35 Bates Ave.
Winthrop, MA 02152

*Frances Savola
68 Thornton Park
Winthrop, MA 02152

*Kathryn Schlichting
34 Pico Ave.
Winthrop, MA 02152

*Larry Segal
83 Sunnyside Ave.
Winthrop, MA 02152

*Sennott
78 Grandview Ave.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Ernest Serino
P.O. Box 520301
Winthrop, MA 02152

*Maureen Sheehan
83 Chester Ave.
Winthrop, MA 02152

*Sarah Sheehan
45 Chester Ave.
Winthrop, MA 02152

*Jacqueline Sheppard
198 Court Rd.
Winthrop, MA 02152

*Suzanne Silvestri
24 Nevada Street
Winthrop, MA 02152

*Emily Simpson
173 Grovers Ave., Apt. # 1
Winthrop, MA 02152

*Jeanne Skobeleff
1064 Shirley St.
Winthrop, MA 02152

*John Silck
23 Buchanan St., Apt. # 23
Winthrop, MA 02152

*Judith Silck
23 Buchanan St.
Winthrop, MA 02152

*Elizabeth Smith
14 Townsend St.
Winthrop, MA 02152

*Peter Souza
35 Pico Ave.
Winthrop, MA 02152

*John Stasio
45 Tafts Ave.
Winthrop, MA 02152

*Beatrice Stern
138 Tafts Ave.
Winthrop, MA 02152

*David Stevens
36 Thornton Park
Winthrop, MA 02152

*Stephen Stoddard
26 Plummer Ave.
Winthrop, MA 02152

*Jean Stoddard
26 Plummer Ave.
Winthrop, MA 02152

*Stephen Stoddard
47 Bates Ave.
Winthrop, MA 02152

*N.M. Story
19 Frances St.
Winthrop, MA 02152

*Ritchie Strangie
17 Sunnyside Ave.
Winthrop, MA 02152

*Paul Struzziero
843 Shirley Street
Winthrop, MA 02152

*Carol Sullivan
271 Winthrop St.
Winthrop, MA 02152

*Debra Surda
34 Townsend St.
Winthrop, MA 02152

*Paul and Christine Sutton
16 Willow Ave.
Winthrop, MA 02152

*Claire Sweeney
20 Coral Ave.
Winthrop, MA 02152

*Susan Sweeney
267 Bowdoin St.
Winthrop, MA 02152

*Lisa Tardif
52 Thornton Park
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*John G. Tardif, Esquire
Attorney at Law
21 Pauline Street
Winthrop, MA 02152

*Gino Towlson
43 Tafts Ave.
Winthrop, MA 02152

*Katherine Tremblay
240 Pleasant St.
Winthrop, MA 02152

*Chris Tsiotos
42 Franklin St.
Winthrop, MA 02152

*Ralph and Nancy Tufo
33 Lewis Terrace
Winthrop, MA 02152

*Nancy and Ralph Tufo
33 Lewis Terrace
Winthrop, MA 02152

*Marie Turner
283 Court Road
Winthrop, MA 02152

*Walter A. Van Dalinda
117 Buchanan St.
Winthrop, MA 02152

*Albert VanBuskirk
139 Revere St., Apt. # 2
Winthrop, MA 02152

*Debra Veader
80 Ingleside Ave.
Winthrop, MA 02152

*Rosemary Vecchio
472 Pleasant St.
Winthrop, MA 02152

*Lois Ventresco
70 Read St.
Winthrop, MA 02152

*Harold Verdi
33 Loring Rd.
Winthrop, MA 02152

*Marguerite Vien
46 Sunnyside Ave.
Winthrop, MA 02152

*Stephen Vigneau
14 Chester Ave.nue
Winthrop, MA 02152

*David Visco
18 Jerald St.
Winthrop, MA 02152

*Lawrence Vitale
45 Nevada St.
Winthrop, MA 02152

*James Vitale
45 Nevada St.
Winthrop, MA 02152

*Donna Vitale
45 Nevada St.
Winthrop, MA 02152

*Mary Vitale
47 Nevada St.
Winthrop, MA 02152

*June Wadkins
108 Shirley St.
Winthrop, MA 02152

*William Wall
46 Thornton Park
Winthrop, MA 02152

*Nellie Wall
19 Maryland Ave.
Winthrop, MA 02152

*Kathleen and Larry Walsh
815 Shirley St.
Winthrop, MA 02152

*Daniel Walsh
815 Shirley St., Apt. # 2
Winthrop, MA 02152

*Ron Wayland
61 Edgehill Road
Winthrop, MA 02152

*Susan Welch
118 Terrace Ave.
Winthrop, MA 02152

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

*Lorraine White
54 Triton Ave.
Winthrop, MA 02152

*Daniel Wiener
600 Governors Drive
Winthrop, MA 02152

*Jane Wilde
911 Shirley St.
Winthrop, MA 02152

*Roberta Will
20 Thornton St.
Winthrop, MA 02152

*Bob Winter
60 Grandview Ave.
Winthrop, MA 02152

*Susan Wolverton
40 Orlando Ave.
Winthrop, MA 02152

*Laurette Wood
9 Otis St.
Winthrop, MA 02152

*Barbara Wright
55 Otis St.
Winthrop, MA 02152

*Bob and Marie Wynne
209 River Rd.
Winthrop, MA 02152

*Edward Zeigler
517 Pleasant St.
Winthrop, MA 02152

*Adi and Janet Ziv
54 Lewis Ave.
Winthrop, MA 02152

*Ann Zolla
25 Ocean View Way
Winthrop, MA 02152

*Anzuoni
140 Tafts Ave.
Winthrop, MA 02152

Libraries

Bedford

Bedford Public Library
7 Mudge Way
Bedford, MA 01742

Boston

Boston Public Library
Main Branch
666 Boylston Street
Boston, MA 02117

Boston Public Library
685 Tremont Street
Boston, MA 02118

Braintree

Watson Park Library
85 Quincy Avenue
Braintree, MA 02184

Thayer Public Library
798 Washington Street
Braintree, MA 02184

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Brookline

Brookline Main Library
361 Washington Street
Brookline, MA 02445

Cambridge

Cambridge Public Library
449 Broadway
Cambridge, MA 02138

Charlestown

Boston Public Library
Charlestown Branch
179 Main Street
Charlestown, MA 02129

Chelsea

Chelsea Public Library
569 Broadway
Chelsea, MA 02150

Cohasset

Paul Pratt Memorial Library
160 South Main Street
Cohasset, MA 02025

Concord

Concord Public Library
129 Main Street
Concord, MA 01742

Dedham Public Library

Dedham Public Library
43 Church Street
Dedham, MA 02026

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

East Boston

Boston Public Library
East Boston Branch
276 Meridian Street
East Boston, MA 02128

Boston Public Library
Orient Heights Branch
18 Barnes Avenue
East Boston, MA 02128

Edgartown

Edgartown Free Public Library
58 North Water Street
PO Box 5249
Edgartown, MA 02539

Everett

Parlin Memorial Library
410 Broadway
Everett, MA 02149

Hingham

Hingham Public Library
66 Leavitt Street
Hingham, MA 02043

Hull

Hull Public Library
9 Main Street
Hull, MA 02045

Jamaica Plain

Boston Public Library
Jamaica Plain Branch
12 Sedgwick Street
Jamaica Plain, MA 02130

Lexington

Cary Memorial Library
1874 Massachusetts Avenue
Lexington, MA 02420

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Lincoln

Lincoln Public Library
Bedford Road
Lincoln, MA 01773

Malden

Malden Public Library
36 Salem Street
Malden, MA 02148

Medford

Medford Public Library
11 High Street
Medford, MA 02155

Melrose

Melrose Public Library
69 West Emerson Street
Melrose, MA 02176

Milton

Milton Public Library
Main Branch
476 Canton Avenue
Milton, MA 02186

Nahant

Nahant Public Library
15 Pleasant Street
Nahant, MA 01908

Nantucket

Nantucket Atheneum
Lower India Street
Box 802
Nantucket, MA 02554

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Quincy

Quincy Public Library
Thomas Crane Branch
40 Washington Street
Quincy, MA 02169

Provincetown

Provincetown Public Library
330 Commercial Street
Provincetown, MA 02657

Revere

Revere Public Library
179 Beach Street
Revere, MA 02151

Roxbury

Boston Public Library
Dudley Branch (Roxbury)
65 Warren Street
Roxbury, MA 02119

Somerville

Somerville Central Library
79 Highland Avenue
Somerville, MA 02143

South Boston

Boston Public Library
South Boston Branch
646 East Broadway
South Boston, MA 02127

Weymouth

Tufts Library
46 Broad Street
Weymouth, MA 02188

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Winthrop

Winthrop Public Library
One Metcalf Square
Winthrop, MA 02151

* Notice of Availability sent to reviewer, along with Executive Summary for the Logan Airside Improvements Planning Project

Acronyms

AC	Advisory Circular
ACHP	Advisory Council on Historic Preservation
ADT	Average daily traffic
ADG	Airplane Design Group
ADSIM	Airfield Delay Simulation Model
AIP	Airport Improvement Program
Airside Project	Logan Airside Improvements Planning Project
AIRS	Aerometric Information Retrieval System
AITC	Airport Intermodal Transit Connector
ALP	Airport Layout Plan
ALPA	Air Line Pilots Association
ALS	Approach Lighting System
ANCA	Airport Noise and Capacity Act
APO	FAA Office of Aviation Policy and Plans
ARC	Airside Review Committee
ARP	Airport Reference Point
ARTS	Automated Radar Terminal System
As	arsenic
ASQP	Airline Service Quality Performance
ATA	Air Transport Association
ATC	Air Traffic Control
ATCR	Air Traffic Consumer Reports
ATCT	air traffic control tower
ATIS	Automatic Terminal Information Service
APUs	Auxiliary Power Units
BMPs	Best Management Practices
BVFR	Basic Visual Flight Rules
BWSC	Boston Water and Sewer Commission
CAA	Clean Air Act
CAC	Community Advisory Committee
CA/T	Central Artery/Tunnel Project
Cd	cadmium
CEP	Capacity Enhancement Plan
CEQ	Council on Environmental Quality

CERL	U.S. Army Construction Engineering Research Laboratory
CFR	Code of Federal Regulations
CM	construction management consulting firm
CMR	Code of Massachusetts Regulations
CNI	Cumulative Noise Index
CO	carbon monoxide
CODAS	FAA's Consolidated Operations and Delay Analysis System
Cr	chromium
CRS	Computerized Reservation Systems
cy	cubic yards
dB	decibel
dBA	A-weighted decibel
DELAYS	(a delay simulation model)
DELAYSIM	(a delay simulation model)
DEP	Department of Environmental Protection
DH	decision height
DNL	Day-Night Sound Level
DOT	Department of Transportation
Draft EIS/EIR	Draft Environmental Impact Statement/ Environmental Impact Report
EA	Environmental Assessment
EAS	Essential Air Service
EDMS	Emissions and Dispersion Modeling System
EDR	Environmental Data Report
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ENF	Environmental Notification Form
EOEA	Executive Office of Environmental Affairs
EOTC	Executive Office of Transportation and Construction
EPA	Environmental Protection Agency
EPNL	Effective Perceived Noise Level
ESPR	Environmental Status & Planning Report
ETMS	FAA's Enhanced Traffic Management System
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEIR (Final EIR)	Final Environmental Impact Report
FHWA	Federal Highway Administration
FIS	Federal Inspection Services

FLAPS	Flexible Airport Simulation Model
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
FSEIR	Final Supplemental Environmental Impact Report
GA	General Aviation
GEIR	Generic Environmental Impact Report
GIS	Geographic Information System
GSE	ground service equipment
GNTM	Ground Noise Taxi Model
Hg	mercury
HOV	high occupancy vehicle
Hz	hertz
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
INM	Integrated Noise Model
INS	Immigration and Naturalization Service
LDA	Landing Distance Available
LDMS	Logan Dispersion Modeling System
Leq	equivalent sound level
LeqN	night equivalent sound level
Lmax	Maximum Sound Level
Logan	Boston-Logan International Airport
LOGIC	Logan Growth and Impact Control
MAC	Massachusetts Aeronautics Commission
MA DEP	Massachusetts Department of Environmental Protection
MAMA	Massachusetts Airport Managers Association
MA NHESP	Massachusetts Natural Heritage & Endangered Species Program
MASHPO	Massachusetts State Historic Preservation Office
MassHighway	Massachusetts Highway Department
Massport	Massachusetts Port Authority
MBTA	Massachusetts Bay Transportation Authority
MCP	Massachusetts Contingency Plan (310 CMR 40.0000)
MEPA	Massachusetts Environmental Policy Act
MESA	Massachusetts Endangered Species Act
MGL	Massachusetts General Law
MHC	Massachusetts Historical Commission

MLS	Manual Landing Systems
MNG	Massachusetts National Guard
MPO	Metropolitan Planning Organization
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MTA	Massachusetts Turnpike Authority
MWRA	Massachusetts Water Resources Authority
NAAQS	National Ambient Air Quality Standards
NAVAID	navigational aid
NEC	New England Council
NECIP	Northeast Corridor Improvement Project
NEPA	National Environmental Policy Act
NHESP	Natural Heritage and Endangered Species Program
NHPA	National Historic Preservation Act of 1968
NMS	Noise Monitoring Site
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NTSB	National Transportation Safety Board
O_3	ozone
O&M	Operations and Maintenance
OAG	Official Airline Guide
OFA	Object Free Area
OFZ	Obstacle Free Zone
OPSNET	FAA Air Traffic Operations Network
PACE	Program for Airfield Capacity Efficiency (1998)
Pb	lead
PCB	polychlorinated biphenyls
PDA	Planned Development Area
PFCs	Passenger Facility Charges
$PM_{2.5}$	particulate matter less than 2.5 microns in size
PM_{10}	particulate matter less than 10 microns in size
PPI	PRAS Performance Index
ppm	parts per million
PPP	Peak Period Pricing
PRAS	Preferential Runway Advisory System
Preferred Alternative	Alternative 1A (includes all actions except Peak Period Pricing)

RCRA	Resource Conservation and Recovery Act
RDSIM	Runway Delay Simulation Model
REIL	Runway End Identifier Lights
ROD	Record of Decision
ROFA	Runway Object Free Area
RON	remain over-night
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RVR	Runway Visual Range
SAR	Strategic Assessment Report
SDEIS	Supplemental Draft Environmental Impact Statement
SDEIS Panel	Supplemental Draft EIS Panel
Supplemental DEIS/ FEIR	Supplemental Draft Environmental Impact Statement / Final Environmental Impact Report
SID	Standard Instrument Departure
SIMMOD	Simulation Model (FAA)
SIP	State Implementation Plan
SMGCS	Surface Management Guidance & Control System
SO_2	sulfur dioxide
STIP	Statewide Transportation Improvement Program
TA	Time Above (a specified noise level)
TAAM	Total Airspace and Airport Modeler
TERP	Terminal En Route Procedures
TIP	Transportation Improvement Plan
TOFA	Taxiway Object Free Area
TPH	Total Petroleum Hydrocarbons
TRB	Transportation Research Board
TSA	Taxiway Safety Area
TSS	Total suspended solids
USPS	United States Postal Service
VAPS	Visual Approach Procedures
VFR	Visual Flight Rules
VOC	volatile organic compounds
29M	29 million passengers
29M Low Fleet	29 Million annual air passenger Low Fleet
37.5M	37.5 million passengers
37.5M High Fleet	37.5 Million annual air passenger High Fleet
37.5M High RJ Fleet	37.5 Million annual air passenger High Regional Jet Fleet

Index

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

Chapter 7

Chapter 8

List of Preparers

List of Preparers

The Logan Airside improvements Planning Project *Draft Environmental impact Statement/Draft Environmental Impact Report*, is a joint effort of the Federal Aviation Administration (FAA) and the Massachusetts Port Authority (Massport). Technical analyses and documents were prepared by a team of consultants. The entities involved, as well as the personnel their individual areas of responsibility, are listed below:

Federal Aviation Administration, New England Region

Vincent Scarano – Manager, Airports Division
John Silva - Manager, Environmental Programs, Airports Division
Ralph Nicosia-Rusin - Capacity Program Manager, Airports Divisions

Massachusetts Port Authority

Thomas Kinton -Director of Aviation
Betty Desrosiers - Director of Aviation Planning and Development
Flavio Leo - Manager of Aviation Planning
Stewart Dalzell- Deputy Director of Aviation Planning and Development
(as of September 2000)

Simat, Helliesen & Eichner — Project Management, Purpose and Need, Regional Alternatives, Peak Period Pricing

Deborah Meehan - President/Project Manager
David Hollander - Director/Peak Period Pricing, Purpose and Need
Beverly Jones - Director/ Regional Alternatives, Purpose and Need
John Brandt – Senior Consultant
Andrew Goldman - Consultant

Flight Transportation Associates, Inc. - Operational Analysis, Delay Modeling

William C. Hoffman-President

Harris Miller Miller & Hanson, Inc. - Noise impact analysis

Robert L. Miller – Sr. Vice President and Supervisory Consultant
Robert C. Mentzer – Consultant
Ashish Maru -- Consultant
Dana R. Turchi – GIS Specialist

URS, Inc. - Air quality analysis

Mike Steer, P.E. - Principal Consultant
Michael A. Kenney, QEP, CHMM- Air Quality Assessment Coordinator
Kristin Marshall – Air Quality Specialist

Frederic R. Harris, Inc. - Land Use, Cultural Resources, Cumulative Impacts

Joanne Haracz, AICP - Environmental Planner
Maureen Cavanaugh – Senior Planner
Crystal Johnson - Environmental Planner
Cathal Ridge - Planner
Marilyn Palmer - Planner

Jason M. Cortell and Associates, Inc. – Natural Resources

Stewart Dalzell – Natural Resources Task Manager/Public Involvement
Carlton L. Noyes – Water Quality/Soils Management
Marshall W. Dennis – Vegetation and Wildlife Impact Assessment/Mitigation Planning

Edwards & Kelcey – Runway/Taxiway Layout, Computer Simulations

William Richardson - Principal Airport Planner
Kenneth Scarborough - Airport Planner
Edmund Dawes, P.E. - Principal Airport Engineer
James Falvey, P.E. - Airport Engineer
Nils Gonzalez, P.E. - Airport Engineer

Vanasse Hangen Brustlin, Inc. – Document Production

Carol Lurie – Senior Associate, Airport Services
Frank Bracaglia – Senior Project Manager
Marla Engel – Senior Planner
Jill Cohen – Planner
Scott Schilt – Planner
Karen Berchtoldt – Planner
Kristin Hychka – Environmental Scientist
Terri Courtemarche – Graphic Designer
Fani Nicheva – Graphic Designer
Daniel Boudreau – Cartographer/GIS Specialist